

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

two applications by **Simons Pass Station** take and use surface water from Lake Pūkaki or Pūkaki Canal (**CRC062867**) and Tekapo Stilling Basin (**CRC082311**) for spray irrigation of up to 2,400 hectares of crops and pasture, and for stock water use, at Simons Pass Station, State Highway 8, Lake Pūkaki.

**FINAL REPORT AND DECISION OF HEARING COMMISSIONERS PAUL ROGERS,
DR JAMES COOKE AND EDWARD ELLISON**

PART B - SITE SPECIFIC DECISION

1 INTRODUCTION

- 1.1 This is the final decision on applications CRC062867 and CRC082311 by **Simons Pass Station Limited** (the applicant). This decision follows, and should be read in combination with, our Interim Decision on these applications dated 9 March 2012.

2 INTERIM DECISION

- 2.1 In our Interim Decision, we concluded that some amendments to the proposal were required before it could be granted. Our principal concern related to the effect of the proposal on landscape values, particularly the visibility of the Pūkaki Flats North irrigation area when viewed from State Highway 8 (SH8) and Scenic Viewing Area 16 (SVA16).
- 2.2 To address this issue, we directed that the applicant provide the following additional information:
- (a) A revised plan of the irrigation areas with proposed pivot layout that excludes any irrigation within:
 - (i) the area identified at Appendix A attached to the Interim Decision (being a block of land directly adjacent to SH8); and
 - (ii) 600m of the boundary of SVA16 as identified on Map No. 33 of the Mackenzie District Plan.
 - (b) A revised annual volume based on this reduced irrigation area and using the WQN9v2 approach as described in this decision.
 - (c) Any other amendments to the proposal (including the FEMP) that are necessary as a direct consequence of the above amendments, including, but not limited to:
 - (i) An updated Farm Environmental Management Plan and Development Staging Plan; and
 - (ii) Any revisions to the Nutrient Discharge Allowance for Simons Pass Station.

3 APPLICANT'S RESPONSE

- 3.1 In response to our Interim Decision, the applicant provided a memorandum dated 27 March 2012 along with revised plans and a revised FEMP.
- 3.2 The revised proposed pivot layout plan complies with our directions in that it provides a 600m buffer from SVA16 and excludes the identified area adjacent to SH8. Although this reduces the command area 3,880 ha to 3,486 ha, the applicant advised that this does not reduce the area to be irrigated. The pivot layout has been adjusted to fit within this reduced command area and is still able to provide for irrigation of 2,400 ha as originally proposed.
- 3.3 Given that the area to be irrigated is not reduced, the applicant advised that there is no change to the annual volume or the Nutrient Discharge Allowance for Simons Pass Station. In relation to the FEMP, the only change is to amend the indicative pivot layout in accordance with the reduced command area.

4 OUR CONSIDERATION

- 4.1 We accept that the reduced command area addresses the concern identified in our Interim Decision regarding landscape values by providing a suitable buffer between the irrigation area, SH8 and SVA16. We also accept that there is no need to reduce the annual volume or Nutrient Discharge Allowance given that the same irrigation area can be maintained within the reduced command area.
- 4.2 On this basis and for the reasons set out in our Interim Decision, we conclude that the outcome which best achieves the purpose of the Act is to grant consent to the applications, subject to conditions incorporating the revised FEMP and reduced command area.

5 DECISION

- 5.1 Pursuant to the powers delegated to us by the Canterbury Regional Council and pursuant to sections 104 and 104B of the Resource Management Act 1991, we:

GRANT IN PART application **CRC062867** by Simons Pass Station Limited to take and use surface water from Pūkaki Canal for spray irrigation of up to 2,400 hectares of crops and pasture, and for stock water use, at Simons Pass Station, State Highway 8, Lake Pūkaki, but **DECLINE THAT PART** of the application to take and use surface water from Lake Pūkaki for the same purpose;

GRANT application **CRC082311** by Simons Pass Station Limited to take and use water from Tekapo Stilling Basin for spray irrigation of up to 2,400 hectares of crops and pasture, and for stock water use, at Simons Pass Station, State Highway 8, Lake Pūkaki.

- 5.2 Pursuant to section 108 RMA, the grant of consent is subject to the conditions specified at **Appendices A and B**, which conditions form part of this decision and consent.
- 5.3 The duration of these consents shall be until the 30th April 2025.

DECISION DATED AT CHRISTCHURCH THIS 7TH DAY OF MAY 2012

Signed by¹:

Paul Rogers



Dr James Cooke



Edward Ellison



¹ This decision has been signed as a majority decision of the three named Commissioners due to the unavailability of Commissioner Mike Bowden for health reasons.

APPENDIX A

Conditions of Consent (CRC062867) – Pūkaki Canal

Take of water

1. Water shall only be taken from the Pūkaki Canal, at or about map reference NZMS 260 H38:805-641:
 - (a) for irrigation between 01 September and the following 30 April at a rate not exceeding 1,531 litres per second, with a volume not exceeding 132,280 cubic metres per day (being from 12am to 12am the following day) and 13,852,800 cubic metres per year (measured between 1 July and the following 30 June); and
 - (b) for stock drinking water at a rate not exceeding 28 litres per second, a daily volume not exceeding 497 cubic metres (being from 12am to 12am the following day), and an annual volume not exceeding 181,330 cubic metres (measured between 1 July and the following 30 June), provided that the combination of water taken for irrigation and stock drinking water does not exceed a rate of 1,531 litres per second;
2. This consent shall not be exercised concurrently with consents CRC082311 or CRC011554
3. The taking of water in terms of this consent shall cease upon receipt of written advice from the owners and/or operators of the Waitaki Power Scheme that:
 - (a) the flow of water into Lake Pūkaki, or the Pūkaki Canal has ceased, or is to cease, as a result of the operational requirements of the Waitaki Power Scheme; or that
 - (b) maintenance is to be undertaken to ensure the structural integrity and safety of, or to avoid risk or compromise to the operation of the Waitaki Power Scheme infrastructure, and such maintenance is unable to be undertaken while abstraction authorised in terms of this consent is occurring, particularly when such maintenance results in a restricted flow of water into the Pūkaki Canal.
4. The taking of water for irrigation shall cease:
 - (a) whenever the level of Lake Pūkaki, as estimated by the Canterbury Regional Council, is at or below 518 metres above mean sea level; and
 - (b) Whenever the taking of water for irrigation ceases in accordance with clause (a) of this condition, the consent holder shall ensure that the rate and volume of water taken does not exceed the rate and volume of water required for actual and reasonable stock water needs at the time.

Use of water

5. Water shall only be used for the spray irrigation of 2,400 hectares per irrigation season on Simons Pass Station within the area of land shown on attached **Plan CRC062867/CRC082311**, which forms part of this consent.
6. Prior to exercising this consent, all border dyke irrigation on Simons Pass Station shall cease.
7. No pivot irrigators shall be used or located on the Mary Range Irrigation Area (as identified on **Plan CRC062867/CRC082311**) within 250m of the boundary of State Highway 8.
8. There shall be a minimum 5 metre setback, where there is no irrigation, from any permanently flowing waterways within the irrigation areas marked on **Plan CRC062867/CRC082311**.
9. Water for irrigation shall only be used on or applied to land that is subject to a memorandum of encumbrance that complies with the requirements of the agreement entitled "Agreement in Relation to the Allocation of Water for Irrigation" between Meridian Energy Limited and the Mackenzie Irrigation Company Limited dated 31 October 2006.

10. The consent holder shall, six months prior to this consent being exercised, provide to the Canterbury Regional Council a certificate from the Consent Holder's solicitor certifying that the memorandum of encumbrance provided for in Condition 1 is registered on the computer registers for the land shown on **Plan CRC062867/CRC082311** and any other evidence of registration as the Canterbury Regional Council may require (if any).
11. The consent holder shall take all practicable steps to:
 - (a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and
 - (b) Avoid leakage from pipes and structures; and
 - (c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.

Water metering

12. The consent holder shall, prior to exercising this consent, install:
 - (a) a water meter(s) that has an international accreditation or an equivalent New Zealand calibration endorsement suitable for use with an electronic recording device, from which the rate and the volume of water taken can be determined to within an accuracy of plus or minus five percent at a location(s) that will ensure the total take of water is measured, including the total take of water from the Pūkaki Canal and the total take of water from the Pūkaki Irrigation Company Limited canal at the point at which water is supplied to Simons Pass Station; and
 - (b) a tamper-proof electronic recording device such as a data logger that shall record (or log) the flow totals every 15 minutes.
13. If the water meter specified in Condition 12 is not an electromagnetic or ultrasonic meter, the consent holder shall, prior to the first exercise of this consent install or make available an easily accessible straight pipe(s) at a location where the total water take is passing through, with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system, to allow the Canterbury Regional Council to conduct independent measurements.
14. The measuring and recording device(s) specified in Condition 12 shall:
 - (a) be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording);
 - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which shall be downloaded and stored in a commonly used format and provided to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council;
 - (c) unless certified by a suitably qualified person that telemetry is not feasible, be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder.
 - (d) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions;
 - (e) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and
 - (f) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
15. No data in the recording device(s) shall be deliberately changed or deleted.

16. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Condition 12 are at all times fully functional and meet the accuracy standard stated in that condition.
17. Within one month of the installation of the measuring or recording device(s) specified in Condition 12 (or any subsequent replacement devices), the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
 - (a) the measuring and recording device(s) is installed in accordance with the manufacturer's specifications; and
 - (b) data from the recording device(s) can be readily accessed and/or retrieved in accordance with these conditions.
18. At five yearly intervals or at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying that:
 - (a) the water meter(s) is measuring the rate of water taken as specified in these conditions; and
 - (b) the tamper-proof electronic recording device is operating as specified in these conditions.

Fish Screen

19. A fish exclusion device shall be installed, operated and maintained on the intake to ensure that fish are prevented from passing into the intake.
20. The fish screen shall be positioned to ensure that there is unimpeded fish passage to and from the waterway and to avoid the entrapment of fish at the point of abstraction, and to minimise the risk of fish being damaged by contact with the screen face.
21. The fish screen shall be designed or supplied by a suitably qualified person who shall ensure that the design criteria specified in Conditions 19 and 20 of this consent is achieved. Prior to the installation of the fish screen, a report containing final design plans and illustrating how the fish screen will meet the required design criteria and an operation and maintenance plan for the fish screen shall be provided to Environment Canterbury, Attention: RMA Compliance and Enforcement Manager.
22. A certificate shall be provided to Environment Canterbury by the designer or supplier of the fish screen to certify that the fish screen has been installed in accordance with the details provided to Environment Canterbury in accordance with Conditions 19 and 20 inclusive of this consent.
23. The fish screen shall be maintained in good working order. Records shall be kept of all inspections and maintenance, and those records shall be provided to Environment Canterbury upon request.

Nutrient Loading

24. For the purposes of interpretation of the conditions of this consent Simons Pass Station shall be defined as the areas in certificates of title and Pastoral Lease numbers CB529/5, CR723/23, CB723/22, 341089, 341087, CB757/35, CB723/23 and CB529/5, which total 6470.33 hectares.
25. The consent holder will implement the proposal in strict accordance with the development staging plan entitled **Pūkaki Flats North Staging Plan**, which is attached and marked **CRC062867/CRC082311-A** and forms part of this consent.
26. The consent holder shall prepare once per year, and after each development stage (as set out in the Pūkaki Flats North Staging Plan) is commissioned, an Overseer[®] nutrient budgeting model report, and shall prepare, at least once per year, a report of the annual farm nutrient loading from the two areas of Simons Pass Station (land west of Mary Range ("Pūkaki Flats North") and land east of Mary Range ("Mary Range Farming")) using the model Overseer[®]

- (AgResearch model version number 5.4.3 or later) undertaken by a person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification.
27. When undertaking the modelling outlined in Condition 26, the consent holder shall use either weather records collected on-farm or from constructed data from the nearest weather station.
 28. A copy of the reports prepared in accordance with Condition 26 shall be given to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within one month of their completion.
 29. The consent holder shall maintain ongoing and complete records for Simons Pass Station in relation to the type of crop, cultivation methods, nutrient inputs to the nearest kilogram, stock movements and yields, prediction of realistic crop yields that are used to determine crop requirements, and all other inputs to the Overseer[®] nutrient budgeting model. Such records are to be used as inputs to the Overseer[®] method as described in Condition 26, and shall be made available to the Canterbury Regional Council on request.
 30. The consent holder may not commence irrigation under this consent unless the annual (01 July to 30 June) nutrient loading (NDA) is estimated in accordance with Condition 26 to be less than 94,490 kg of nitrogen and 7,162 kg of phosphorus for land west of Mary Range (Pūkaki Flats North); and 17,794 kg of nitrogen and 1,013 kg of phosphorus for land east of Mary Range (Mary Range Farming).
 31. The NDAs, incorporating any reductions required by receiving water quality nutrient trigger conditions, shall be complied with from the commencement of consent.
 32. Where Overseer, or Overseer modelling, is referred for the purposes of calculating or determining compliance with the NDA limits associated with activities on the property, it shall be undertaken by an independent person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification
 33. The consent holder shall implement the onsite Farm Environmental Management Plans (FEMPs) for Simons Pass Station (land west of Mary Range (Pūkaki Flats North) and land east of Mary Range (Mary Range Farming)) which are attached and marked **CRC062867/CRC082311-B** and **CRC062867/CRC082311-C** respectively and form part of this consent.
 34. Subject to Condition 33, the consent holder shall implement, and update annually the FEMPs for Simons Pass Stations. The FEMPs shall include:
 - (a) Verification of compliance with NDAs (incorporating any reductions required by receiving water quality nutrient trigger conditions) by farm nutrient modelling using the model Overseer (AgResearch model version number 5.4.3 or later).
 - (b) Implementation of Mandatory Good Agricultural Practices ("MGAPS") and requirements to manage in accordance with the Simons Pass Station Overseer model inputs.
 - (c) The Overseer parameter inputs report, which shall be supplied to the Canterbury Regional Council.
 - (d) A property specific environmental risk assessment (including a description of the risks to water quality arising from the physical layout of the property and its operation which are not factored in as an Overseer parameter) prepared by a suitably qualified person which identifies any farm specific environmental risks along with measures to mitigate the farm specific environmental risks.
 - (e) A requirement to review the risk assessment if there are any significant changes in land use practice.
 35. Detailed records shall be maintained of fertilizer application rates, types of crops (including winter feed/forage crops), cultivation methods, stock units by reference to type, breed and age, prediction of realistic crop yields that are used to determine crop requirements and all other inputs to the Overseer nutrient budgeting model.

36. A report on Overseer modelling shall be provided within one month of completion of the Overseer modelling by the person with the qualifications described in Condition 32 and no later than two months prior to the start of the next irrigation season to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. The consent holder shall supply to the Canterbury Regional Council all model inputs relied upon for the annual Overseer® modelling.
37. Changes may be made to the Simons Pass Station Overseer model inputs, provided that written certification is provided that the change is modelled using Overseer, and that the result of that modelling demonstrates that the NDAs are not exceeded. A copy of that certification plus a copy of the resultant Overseer parameter report shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, prior to the implementation of that change.

Subdivision

38. The NDAs shall be recalculated if there is a sale or transfer of any part, but not the whole, of the total farm area of 6470.33 hectares. The recalculated NDAs shall be undertaken to accurately redistribute the NDA between the resultant properties and shall replace the NDAs specified in Condition 30. The new NDAs may be recalculated on any proportion as long as the total of all the NDAs does not exceed the NDAs of the parent title as set out in Condition 30. The recalculation of the NDAs shall be undertaken and certified using Overseer, completed and provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager together with a copy of the full Parameter report, within one month of the sale or transfer.

Stock and farm management

39. No stock shall be fed out on the lower terraces of the Pūkaki Flats North property
40. The consent holder shall ensure that stock do not have any access to flowing waterways and any open channel irrigation
41. The consent holder shall ensure that the existing fence along the property boundary with the Pūkaki River on the Pūkaki Flats North property is maintained in stock proof condition along the entire boundary with the river.
42. Tributaries of the Mary Burn shall be fenced approximately 5 m from the bank and planted to prevent erosion.
43. The consent holder shall ensure that all stored effluent is stored in a storage facility with an impermeable lining.
44. The consent holder shall ensure that the storage facility has at least three days storage capacity.
45. The consent holder shall ensure that all silage is made and stored on a concrete pad which drains to an effluent collection facility.
46. The consent holder shall ensure that all liquor from the silage storage area is recycled to land or tankered from the site.

Fertiliser and soil management

47. Fertiliser shall be managed and applied in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any subsequent updates.
48. The consent holder shall keep a record of all fertiliser applications applied to the property, including fertiliser type, concentration, date and location of application, climatic conditions, mode of application and any report of the fertiliser contractor regarding the calibration of the spreader.
49. For land based spreading of fertiliser:

- (a) where an independent fertiliser spreading contractor is used the consent holder shall keep a record of the contractor used, which can be supplied to the Canterbury Regional Council upon request; or
 - (b) where the applicant's own fertiliser spreaders are used, the consent holder shall test and calibrate the fertiliser spreaders at least annually, and every five years the fertiliser spreader will be certified by a suitably qualified person in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any subsequent updates and the results of testing shall be provided to the Canterbury Regional Council upon request.
50. Nitrogen fertiliser shall not be applied to land between 31st May and 1st September.
51. All fertiliser brought onto the property which is not immediately applied to the land shall be stored in a covered area that incorporates all practicable measures to prevent the fertiliser entering waterways.
52. Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen / hectare per application.
53. If liquid fertilisers, excluding liquid effluent, are stored on-site for more than three working days, the consent holder shall ensure that the fertiliser is stored in a bunded tank, at least 110% of the volume of the tank to avoid any discharge to surface or groundwater and such that it is also protected from vehicle movements.
54. Fertiliser filling areas shall not occur within 50 metres from a water course, spring or bore.
55. For land based spreading, fertiliser should not be applied within 20 metres of a watercourse.
56. Where practicable, the consent holder shall:
- (a) use direct drilling as the principal method for establishing pastures; and
 - (b) sow and irrigate all cultivated areas within the irrigation area as soon as possible following ground disturbance.

Irrigation Infrastructure

57. The consent holder shall ensure that all new irrigation infrastructure (not on the property at the time of commencement of this consent) is:
- (a) designed and certified by a suitably qualified independent expert holding a National Certificate in Irrigation Evaluation Level 4, and installed in accordance with the certified design. Copies of certified design documents shall be provided to the Canterbury Regional Council upon request; and
 - (b) tested within 12 months of the first installation of the new irrigation infrastructure and afterwards every five years in accordance with the 'Irrigation Code of Practice and Irrigation Design Standards, Irrigation NZ, March 2007' (code of practice) by a suitably qualified independent expert.
58. Within two months of the testing referred to in Condition 57(b) the expert shall prepare a report outlining their findings and shall identify any changes needed to comply with the code of practice. Any such changes shall be implemented within five years from the date of the report. A copy of the report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, within three months of the report being completed.
59. If existing irrigation infrastructure is being used, the consent holder shall obtain an evaluation report prepared by a suitably qualified person, on the following terms:
- (a) The evaluation shall determine the system's current performance in accordance with the Code of Practice for Irrigation Evaluation.
 - (b) This report shall be obtained within three months of the first exercise of the consent.

- (c) Any recommendations identified in the report shall be implemented within five years from the date of receipt of the report.
- (d) A copy of the report shall be forwarded to the Canterbury Regional Council within three months of the report being completed.

Fertigation

- 60. The irrigation system used in association with taking water in terms of this permit shall not be used to distribute effluent, fertiliser, or any other added contaminant, unless one of the following is installed upstream of the point of addition of the effluent, fertiliser or other added contaminant:
 - (a) a reduced pressure zone device (RPZD), or
 - (b) a pressure vacuum breaker (PVB), or
 - (c) an air gap backflow prevention system
- 61. Installation of a RPZD or a PVB shall be in accordance with section 9 (PVB) or section 12 (RPZD) of Australian/New Zealand Standard AS/NZS 2845.1 Water supply - Backflow prevention devices, Part 1: Materials, design and performance requirements, or an equivalent standard.
- 62. An air gap backflow prevention system shall have an unobstructed vertical air gap separation of at least twice the diameter of the inlet pipe, from the lowest point of the inlet pipe to the flood level rim of the receptacle into which it discharges.
- 63. Field testing and maintenance shall be carried out of an RPZD or a PVB at commissioning of the use of the system for application of effluent or fertiliser and annually afterwards, in accordance with AS 2845.3 Water supply—Backflow prevention devices, Part 3: Field testing and maintenance, or an equivalent standard.
- 64. An air gap backflow prevention system shall be tested at commissioning and annually afterwards. Maintenance shall be undertaken as necessary to ensure that backflow prevention is effective.
- 65. Installation, testing, and maintenance shall be undertaken by a suitably qualified person. A report on the annual testing shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two weeks of initial commissioning and within two weeks of each annual testing. Each report shall be accompanied with the name, qualifications and experience of the person who undertook the installation, testing or maintenance.

River water quality monitoring and response

- 66. The water quality of the two surface water sub catchments for (1) land west of Mary Range (Pūkaki Flats North): ((a) Tekapo River sub-catchment; and (b) Pūkaki River sub-catchment); and for (2) land east of Mary Range (Mary Range Farming in the Mary Burn catchment) shall be monitored within 6 months of the first exercise of this consent as follows:
 - (a) The location for monitoring shall be as follows unless minor changes are required to ensure that monitoring occurs upstream of all intakes and downstream of the irrigation area to appropriately monitor the localised river effects arising from the exercise of this consent:
 - i. Map reference: NZMS 260 H38: 8935-5185 (NZTopo50 BZ16: 7945-9020) (known as "Iron Bridge" (Tekapo upstream)
 - ii. Map reference: NZMS 260 H39: 8725-4800 (NZTopo50 BZ16: 7729-8635) (Tekapo downstream).
 - (b) Water quality variables monitored shall include:
 - i. dissolved inorganic nitrogen (DIN);

- ii. dissolved reactive phosphorus (DRP);
 - iii. dissolved oxygen;
 - iv. conductivity;
 - v. turbidity;
 - vi. periphyton biomass as chlorophyll *a* per square metre (chl *a*); and
 - vii. *E. Coli*.
- (c) This monitoring may be carried out on an individual basis, or may be prepared in collaboration with other consent holders, or on a collective basis by a suitable independent body appointed by all relevant consent holders in the sub catchment.
- (d) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.
- (e) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring river water quality and periphyton biomass. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.
- (f) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person who demonstrates that they understand the appropriate methods to use for surface water quality sampling, including preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.
- (g) The laboratory undertaking analyses shall be accredited for those analyses by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ.
- (h) The results of all sampling shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of reports from the laboratory that undertook the analyses.
67. If the monitoring undertaken in accordance with Condition 66 shows that the average sample result for either or the two monitoring sites specified in Condition 66 over the period December to April is greater than 0.14 mg/L of DIN; or 0.006 mg/L DRP; or 90 mg chl *a*/ m² (early warning trigger) but does not exceed 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl *a*/ m² (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the early warning trigger.
68. The reports referred to in Condition 67 and 72 shall:
- (a) be prepared by an expert review panel consisting of two qualified and experienced independent scientists. One of the scientists shall be nominated by the Canterbury Regional Council, and the other shall be appointed by the consent holder; and
 - (b) include the experts' conclusion on whether the exceedance(s) were as a result of natural influences, one off events, or in whole or part by nutrient loss associated with the irrigation authorised by this consent; and
 - (c) include an assessment as to whether the exceedance measured by the monitoring is likely to continue; and
 - (d) be completed by 30 July following the sampling; and
 - (e) be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.

69. If both the authors of the report prepared in accordance with Condition 68 conclude, after considering all the relevant available information (including on-site monitoring, sub-catchment monitoring, and catchment resource consent compliance and audit reports made available by the Canterbury Regional Council) that either:
- (a) the cause of the breach of the early warning trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent; or
 - (b) that it is unlikely that there is a trend towards exceedance of the environmental standard trigger pertaining to the downstream Tekapo River monitoring sites,
- then no further action needs to be undertaken by the consent holder.
70. If Condition 69 is not satisfied, then:
- (a) the NDA, as specified in Condition 30, shall be reduced by 5% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the total authorised irrigation area developed for irrigation at the time of the exceedance under this resource consent divided by the total farm area (i.e. 2,400 irrigated hectares divided by the total farm area of 6470.33 hectares; and,
 - (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 71.
71. In relation to the Remedial Action Plan referred to in Condition 70(b) and 74(b)(b):
- (a) It shall set out the methods and timeframes for altering and/or adapting farm land use practices to ensure that the exceedance in the early warning trigger pertaining to the monitoring site, is returned as soon as practicable to and maintained below the average sample results of 0.14 mg/L of DIN; or 0.006 mg/L of DRP; or 90 mg chl a/ m² (early warning trigger) for the monitoring site, over the period December to April
 - (b) It shall be prepared by a suitably qualified and experienced person using Overseer or an equivalent method to demonstrate that the actions to be undertaken will achieve the necessary nutrient reductions as soon as practicable.
 - (c) If the Remedial Action Plan is prepared in collaboration with other consent holders who are required to prepare a Remedial Action Plan for this sub catchment a common Remedial Action Plan shall be deemed to comply with this condition.
 - (d) Any actions required by the Remedial Action Plan shall be incorporated into the consent holder's FEMP. The amended FEMP shall be implemented as soon as physically possible.
 - (e) The consent holder shall provide the Canterbury Regional Council with the Remedial Action Plan and an amended FEMP upon request.
72. If the monitoring undertaken in accordance with Condition 66 shows that the average sample result for either of the monitoring sites specified in Condition 66 over the period December to April is greater than 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl a/ m² (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger. This report shall satisfy the requirements specified in Condition 68
73. If both the authors of the report prepared in accordance with Condition 72 conclude, after considering all the relevant available information, including on-site monitoring, sub-catchment monitoring, and catchment resource consent compliance and audit reports made available by the Canterbury Regional Council, that the cause of the breach of the environmental standard trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent, then no further action needs to be undertaken by the consent holder.
74. If the report prepared in accordance with Condition 72 concludes that the environmental standard trigger has been exceeded because of farm land use practices, then:

- (a) the NDA, as specified in Condition 3029, shall be reduced by 10% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (at the time of the exceedance) under this resource consent divided by the total farm area (i.e. 2400 irrigated hectares divided by the total farm area of 6470.33 hectares); and
 - (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 71.
75. If a required reduction in nutrient load is in effect under Condition 70(a) or 74(a) and monitoring for that period shows that the average sample results for the downstream Tekapo River monitoring site over the period December to April is:
- (a) greater than 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl *a*/ m² (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.
 - (b) less than 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl *a*/ m² (environmental standard trigger), but greater than 0.14 mg/L of DIN; or 0.006 mg/L of DRP; or 90 mg chl *a*/ m² (early warning trigger), then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.
 - (c) less than 0.14 mg/L of DIN; or 0.006 mg/L of DRP; or 90 mg chl *a*/ m² (early warning trigger), then for the subsequent season no NDA reduction shall be required under this condition, and the full NDA for the property, as specified in Condition 30 shall be restored.

Lake water quality monitoring and response

76. The water quality of the Haldon (Northern) Arm of Lake Benmore and Lower Lake Benmore shall be monitored in accordance with this condition from the commencement of consent as follows:
- (a) Locations:
 - i. Haldon (Northern) Arm, Map reference: NZMS 260 H39: 8823-3531
 - ii. Lower Lake Benmore, Map reference: NZMS 260 H39:8802-2371
 - (b) Depths: depth integrated 0-10m, 25m, 50m
 - (c) Water quality variables:
 - i. total nitrogen;
 - ii. ammonia;
 - iii. nitrate;
 - iv. nitrite;
 - v. total Kjeldahl nitrogen;
 - vi. total phosphorus;
 - vii. dissolved reactive phosphorus;
 - viii. Secchi disc depth; and
 - ix. chlorophyll *a*.
 - (d) Calculated key water quality variable: Trophic Lake Index (TLI), using the following equations:
 - i. $TLI_c = 2.22 + 2.54 \log(\text{chlorophyll } a)$

- ii. $TLp = 0.218 + 2.92 \log (\text{total phosphorus})$
 - iii. $TLn = -3.61 + 3.01 \log (\text{total nitrogen})$
 - iv. $TLI = \Sigma (TLc + TLp + TLn)/3$
- (e) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.
- (f) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring lake water quality. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.
- (g) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person that demonstrates that they understand the appropriate methods to use for lake water quality sampling, including depth integrated sampling, and preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.
- (h) The laboratory undertaking analyses shall be accredited for those analyses by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ and shall be capable of analysing the variables listed in subparagraph c above with detection limits generally recognised by the scientific community as appropriate for oligotrophic lakes.
- (i) The results of all sampling including the calculated average summer TLI, shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of reports from the laboratory that undertook the analyses.
77. If the monitoring undertaken in accordance with Condition 76 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Haldon Arm monitoring site or the Lower Benmore monitoring site over the period December to April is greater than 2.75 (early warning trigger) but does not exceed 3.0 (environmental standard trigger), then:
- (a) the NDA, as specified in Condition 30, shall be reduced by $5\% \times$ the Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (i.e. 2400 irrigated hectares divided by the total farm area of 6470.33 hectares); and
 - (b) a report into the cause of the breach of the early warning trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.
78. If a reduction in nutrient loading is required under Condition 77(a) and monitoring in the period that that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for the monitoring site over the period December to April:
- (a) continues to be greater than 2.75 but does not exceed 3.0 then there shall be a further NDA reduction of $5\% \times$ IPF for the subsequent irrigation season.
 - (b) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 30 shall be restored.
79. If the monitoring undertaken in accordance with Condition 76 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Haldon Arm monitoring site or the Lower Benmore monitoring site monitoring site over the period December to April is greater than 3.0 (environmental standard trigger), then

- (a) the NDA, as specified in Condition 30, shall be reduced by 10% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (i.e. 2400 irrigated hectares divided by the total farm area of 6470.33 hectares); and
 - (b) a report into the cause of the breach of the environmental standard trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.
80. If a reduction in nutrient loading is required under Condition 79(a) and monitoring in the period that that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for either the Haldon Arm monitoring site or the Lower Benmore monitoring site over the period December to April:
- (a) continues to be greater than 3.0 then there shall be a further NDA reduction of 15% x IPF for the subsequent irrigation season and rising to 20% compounding reductions for any further irrigation season.
 - (b) continues to be greater than 2.75 but does not exceed 3.0 then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.
 - (c) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 30 shall be restored.
81. The nutrient load reductions and investigation referred to in Conditions 77 to 80 inclusive shall not be required if a two person expert scientist panel (with one expert nominated by the Canterbury Regional Council) both conclude after considering all the relevant available information (including catchment resource consent compliance, FEMP compliance monitoring pertaining to this consent and audit reports made available by the Canterbury Regional Council) that the cause of the breach of the early warning trigger or environmental standard (as applicable) was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent.

Surrender of existing consents

82. Prior to the exercise of this consent, the consent holder will complete all necessary steps to surrender that part of water permit CRC011554 utilised to irrigate some 51 ha on Simons Pass Station with water from Mary Burn.

Review of conditions

83. The Canterbury Regional Council may, once per year, on any of the last five working days of March or July serve notice of its intention to review the conditions of this resource consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage.

Lapse

84. The lapsing date for the purposes of section 125 of the Resource Management Act shall be five years from the commencement of this consent.

Advice notes:

- *In relation to Condition 2, the Waitaki Power Scheme means the works including hydraulic control structures, dams, canals, water diversions, penstocks, spill weirs, spill gates, bypass valves, sluice gates, power stations and generating plant, associated ancillary land and structures and resource consents and other rights held by operator/s of the Waitaki Power Scheme to utilise the waters and tributary inflows of Lakes Tekapo, George Scott, Pūkaki, Ōhau, Ruataniwha, Benmore, Aviemore, and Waitaki to generate electricity.*

- *In relation to the lake monitoring required under Condition 76, it is anticipated that all consent holders subject to this condition would coordinate and cooperate together to ensure that the lake water quality monitoring is undertaken and the costs of that monitoring is shared between those consent holders. The Canterbury Regional Council may provide resources to facilitate that coordination and recover the costs of that facilitation from the relevant resource consent holders as a cost of supervising and administering the resource consents. Any non-compliance with water quality monitoring requirements would be a matter for all relevant consent holders and may be the subject of enforcement proceedings.*
- *The discharge of effluent, fertiliser or any contaminant would require authorisation as a permitted activity or via a discharge permit. Contact the Canterbury Regional Council for advice on the relevant regional rules.*
- *If any additional land use consents are required to carry out the proposed activity, those consents must be obtained before giving effect to this consent.*

APPENDIX B

Conditions of Consent (CRC082311) – Tekapo Stilling Basin

Take of water

1. Water shall only be taken from the Tekapo Stilling Basin, at or about map reference NZMS 260 H38:8842-7328
 - (a) for irrigation between 01 September and the following 30 April at a rate not exceeding 1,531 litres per second, with a volume not exceeding 132,280 cubic metres per day (being from 12am to 12am the following day) and 13,852,800 cubic metres per year (measured between 1 July and the following 30 June); and
 - (b) for stock drinking water at a rate not exceeding 28 litres per second, a daily volume not exceeding 497 cubic metres (being from 12am to 12am the following day), and an annual volume not exceeding 181,330 cubic metres (measured between 1 July and the following 30 June), provided that the combination of water taken for irrigation and stock drinking water does not exceed a rate of 1,531 litres per second;
2. This consent shall not be exercised concurrently with consents CRC062867 or CRC011554
3. The taking of water in terms of this consent shall cease upon receipt of written advice from the owners and/or operators of the Waitaki Power Scheme that:
 - (a) the flow of water into Lake Tekapo, or the Tekapo Canal has ceased, or is to cease, as a result of the operational requirements of the Waitaki Power Scheme; or that
 - (b) maintenance is to be undertaken to ensure the structural integrity and safety of, or to avoid risk or compromise to the operation of the Waitaki Power Scheme infrastructure, and such maintenance is unable to be undertaken while abstraction authorised in terms of this consent is occurring, particularly when such maintenance results in a restricted flow of water into the Tekapo Canal.
4. The taking of water for irrigation shall cease:
 - (a) whenever the level of Lake Tekapo, as estimated by the Canterbury Regional Council" is (i) at or below 701.8 metres above mean sea level in the months April to September inclusive; and (ii) at or below 704.1 metres above mean sea level in the months October to March inclusive; and
 - (b) Whenever the taking of water for irrigation ceases in accordance with clause (a) of this condition, the consent holder shall ensure that the rate and volume of water taken does not exceed the rate and volume of water required for actual stock water needs at the time.

Use of water

5. Water shall only be used for the spray irrigation of 2,400 hectares per irrigation season on Simons Pass Station within the area of land shown on attached **Plan CRC062867/CRC082311**, which forms part of this consent.
6. Prior to exercising this consent, all border dyke irrigation on Simons Pass Station shall cease.
7. No pivot irrigators shall be used or located on the Mary Range Irrigation Area (as identified on **Plan CRC062867/CRC082311**) within 250m of the boundary of State Highway 8.
8. There shall be a minimum 5 metre setback, where there is no irrigation, from any permanently flowing waterways within the irrigation areas marked on **Plan CRC062867/CRC082311**.
9. Water for irrigation shall only be used on or applied to land that is subject to a memorandum of encumbrance that complies with the requirements of the agreement entitled "Agreement in

Relation to the Allocation of Water for Irrigation" between Meridian Energy Limited and the Mackenzie Irrigation Company Limited dated 31 October 2006.

10. The consent holder shall, six months prior to this consent being exercised, provide to the Canterbury Regional Council a certificate from the Consent Holder's solicitor certifying that the memorandum of encumbrance provided for in Condition 1 is registered on the computer registers for the land shown on **Plan CRC062867/CRC082311** and any other evidence of registration as the Canterbury Regional Council may require (if any).
11. The consent holder shall take all practicable steps to:
 - (a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and
 - (b) Avoid leakage from pipes and structures; and
 - (c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.

Water metering

12. The consent holder shall, prior to exercising this consent, install:
 - (a) a water meter(s) that has an international accreditation or an equivalent New Zealand calibration endorsement suitable for use with an electronic recording device, from which the rate and the volume of water taken can be determined to within an accuracy of plus or minus five percent at a location(s) that will ensure the total take of water is measured, including the total take of water from the Tekapo Canal and the total take of water from the Pūkaki Irrigation Company Limited canal at the point at which water is supplied to Simons Pass Station; and
 - (b) a tamper-proof electronic recording device such as a data logger that shall record (or log) the flow totals every 15 minutes.
13. If the water meter specified in Condition 12 is not an electromagnetic or ultrasonic meter, the consent holder shall, prior to the first exercise of this consent install or make available an easily accessible straight pipe(s) at a location where the total water take is passing through, with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system, to allow the Canterbury Regional Council to conduct independent measurements.
14. The measuring and recording device(s) specified in Condition 12 shall:
 - (a) be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording);
 - (b) store the entire season's data in each 12-month period from 1 July to 30 June in the following year, which shall be downloaded and stored in a commonly used format and provided to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council;
 - (c) unless certified by a suitably qualified person that telemetry is not feasible, be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder.
 - (d) be installed by a suitably qualified person in accordance with ISO 1100/1-1981 (or equivalent) and the manufacturer's instructions;
 - (e) be maintained throughout the duration of the consent in accordance with the manufacturer's instructions; and
 - (f) be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.

15. No data in the recording device(s) shall be deliberately changed or deleted.
16. All practicable measures shall be taken to ensure that the water meter and recording device(s) specified in Condition 12 are at all times fully functional and meet the accuracy standard stated in that condition.
17. Within one month of the installation of the measuring or recording device(s) specified in Condition 12 (or any subsequent replacement devices), the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
 - (a) the measuring and recording device(s) is installed in accordance with the manufacturer's specifications; and
 - (b) data from the recording device(s) can be readily accessed and/or retrieved in accordance with these conditions.
18. At five yearly intervals or at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying that:
 - (a) the water meter(s) is measuring the rate of water taken as specified in these conditions; and
 - (b) the tamper-proof electronic recording device is operating as specified in these conditions.

Fish Screen

19. A fish exclusion device shall be installed, operated and maintained on the intake to ensure that fish are prevented from passing into the intake.
20. The fish screen shall be positioned to ensure that there is unimpeded fish passage to and from the waterway and to avoid the entrapment of fish at the point of abstraction, and to minimise the risk of fish being damaged by contact with the screen face.
21. The fish screen shall be designed or supplied by a suitably qualified person who shall ensure that the design criteria specified in Conditions 19 and 20 of this consent is achieved. Prior to the installation of the fish screen, a report containing final design plans and illustrating how the fish screen will meet the required design criteria and an operation and maintenance plan for the fish screen shall be provided to Environment Canterbury, Attention: RMA Compliance and Enforcement Manager.
22. A certificate shall be provided to Environment Canterbury by the designer or supplier of the fish screen to certify that the fish screen has been installed in accordance with the details provided to Environment Canterbury in accordance with Conditions 19 and 20 inclusive of this consent.
23. The fish screen shall be maintained in good working order. Records shall be kept of all inspections and maintenance, and those records shall be provided to Environment Canterbury upon request.

Nutrient Loading

24. For the purposes of interpretation of the conditions of this consent Simons Pass Station shall be defined as the areas in certificates of title and Pastoral Lease numbers CB529/5, CR723/23, CB723/22, 341089, 341087, CB757/35, CB723/23 and CB529/5, which total 6470.33 hectares.
25. The consent holder will implement the proposal in strict accordance with the development staging plan entitled **Pūkaki Flats North Staging Plan**, which is attached and marked **CRC062867/CRC082311-A** and forms part of this consent.
26. The consent holder shall prepare once per year, and after each development stage (as set out in the Pūkaki Flats North Staging Plan) is commissioned, an Overseer[®] nutrient budgeting model report, and shall prepare, at least once per year, a report of the annual farm nutrient

loading from the two areas of Simons Pass Station (land west of Mary Range ("Pūkaki Flats North") and land east of Mary Range ("Mary Range Farming")) using the model Overseer® (AgResearch model version number 5.4.3 or later) undertaken by a person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification.

27. When undertaking the modelling outlined in Condition 26, the consent holder shall use either weather records collected on-farm or from constructed data from the nearest weather station.
28. A copy of the reports prepared in accordance with Condition 26 shall be given to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within one month of their completion.
29. The consent holder shall maintain ongoing and complete records for Simons Pass Station in relation to the type of crop, cultivation methods, nutrient inputs to the nearest kilogram, stock movements and yields, prediction of realistic crop yields that are used to determine crop requirements, and all other inputs to the Overseer® nutrient budgeting model. Such records are to be used as inputs to the Overseer® method as described in Condition 26, and shall be made available to the Canterbury Regional Council on request.
30. The consent holder may not commence irrigation under this consent unless the annual (01 July to 30 June) nutrient loading (NDA) is estimated in accordance with Condition 26 to be less than 94,490 kg of nitrogen and 7,162 kg of phosphorus for land west of Mary Range (Pūkaki Flats North); and 17,794 kg of nitrogen and 1,013 kg of phosphorus for land east of Mary Range (Mary Range Farming).
31. The NDAs, incorporating any reductions required by receiving water quality nutrient trigger conditions, shall be complied with from the commencement of consent.
32. Where Overseer, or Overseer modelling, is referred for the purposes of calculating or determining compliance with the NDA limits associated with activities on the property, it shall be undertaken by an independent person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification
33. The consent holder shall implement the onsite Farm Environmental Management Plans (FEMPs) for Simons Pass Station (land west of Mary Range (Pūkaki Flats North) and land east of Mary Range (Mary Range Farming)) which are attached and marked **CRC062867/CRC082311-B** and **CRC062867/CRC082311-C** respectively and form part of this consent.
34. Subject to Condition 33, the consent holder shall implement, and update annually the FEMPs for Simons Pass Stations. The FEMPs shall include:
 - (a) Verification of compliance with NDAs (incorporating any reductions required by receiving water quality nutrient trigger conditions) by farm nutrient modelling using the model Overseer (AgResearch model version number 5.4.3 or later).
 - (b) Implementation of Mandatory Good Agricultural Practices ("MGAPS") and requirements to manage in accordance with the Simons Pass Station Overseer model inputs.
 - (c) The Overseer parameter inputs report, which shall be supplied to the Canterbury Regional Council.
 - (d) A property specific environmental risk assessment (including a description of the risks to water quality arising from the physical layout of the property and its operation which are not factored in as an Overseer parameter) prepared by a suitably qualified person which identifies any farm specific environmental risks along with measures to mitigate the farm specific environmental risks.
 - (e) A requirement to review the risk assessment if there are any significant changes in land use practice.
35. Detailed records shall be maintained of fertilizer application rates, types of crops (including winter feed/forage crops), cultivation methods, stock units by reference to type, breed and age, prediction of realistic crop yields that are used to determine crop requirements and all other inputs to the Overseer nutrient budgeting model.

36. A report on Overseer modelling shall be provided within one month of completion of the Overseer modelling by the person with the qualifications described in Condition 32 and no later than two months prior to the start of the next irrigation season to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager. The consent holder shall supply to the Canterbury Regional Council all model inputs relied upon for the annual Overseer® modelling.
37. Changes may be made to the Simons Pass Station Overseer model inputs, provided that written certification is provided that the change is modelled using Overseer, and that the result of that modelling demonstrates that the NDAs are not exceeded. A copy of that certification plus a copy of the resultant Overseer parameter report shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, prior to the implementation of that change.

Subdivision

38. The NDAs shall be recalculated if there is a sale or transfer of any part, but not the whole, of the total farm area of 6470.33 hectares. The recalculated NDAs shall be undertaken to accurately redistribute the NDA between the resultant properties and shall replace the NDAs specified in Condition 30. The new NDAs may be recalculated on any proportion as long as the total of all the NDAs does not exceed the NDAs of the parent title as set out in Condition 30. The recalculation of the NDAs shall be undertaken and certified using Overseer, completed and provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager together with a copy of the full Parameter report, within one month of the sale or transfer.

Stock and farm management

39. No stock shall be fed out on the lower terraces of the Pūkaki Flats North property
40. The consent holder shall ensure that stock do not have any access to flowing waterways and any open channel irrigation
41. The consent holder shall ensure that the existing fence along the property boundary with the Pūkaki River on the Pūkaki Flats North property is maintained in stock proof condition along the entire boundary with the river.
42. Tributaries of the Mary Burn shall be fenced approximately 5 m from the bank and planted to prevent erosion.
43. The consent holder shall ensure that all stored effluent is stored in a storage facility with an impermeable lining.
44. The consent holder shall ensure that the storage facility has at least three days storage capacity.
45. The consent holder shall ensure that all silage is made and stored on a concrete pad which drains to an effluent collection facility.
46. The consent holder shall ensure that all liquor from the silage storage area is recycled to land or tankered from the site.

Fertiliser and soil management

47. Fertiliser shall be managed and applied in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any subsequent updates.
48. The consent holder shall keep a record of all fertiliser applications applied to the property, including fertiliser type, concentration, date and location of application, climatic conditions, mode of application and any report of the fertiliser contractor regarding the calibration of the spreader.
49. For land based spreading of fertiliser:

- (a) where an independent fertiliser spreading contractor is used the consent holder shall keep a record of the contractor used, which can be supplied to the Canterbury Regional Council upon request; or
 - (b) where the applicant's own fertiliser spreaders are used, the consent holder shall test and calibrate the fertiliser spreaders at least annually, and every five years the fertiliser spreader will be certified by a suitably qualified person in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' or any subsequent updates and the results of testing shall be provided to the Canterbury Regional Council upon request.
50. Nitrogen fertiliser shall not be applied to land between 31st May and 1st September.
51. All fertiliser brought onto the property which is not immediately applied to the land shall be stored in a covered area that incorporates all practicable measures to prevent the fertiliser entering waterways.
52. Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen / hectare per application.
53. If liquid fertilisers, excluding liquid effluent, are stored on-site for more than three working days, the consent holder shall ensure that the fertiliser is stored in a bunded tank, at least 110% of the volume of the tank to avoid any discharge to surface or groundwater and such that it is also protected from vehicle movements.
54. Fertiliser filling areas shall not occur within 50 metres from a water course, spring or bore.
55. For land based spreading, fertiliser should not be applied within 20 metres of a watercourse.
56. Where practicable, the consent holder shall:
- (a) use direct drilling as the principal method for establishing pastures; and
 - (b) sow and irrigate all cultivated areas within the irrigation area as soon as possible following ground disturbance.

Irrigation Infrastructure

57. The consent holder shall ensure that all new irrigation infrastructure (not on the property at the time of commencement of this consent) is:
- (a) designed and certified by a suitably qualified independent expert holding a National Certificate in Irrigation Evaluation Level 4, and installed in accordance with the certified design. Copies of certified design documents shall be provided to the Canterbury Regional Council upon request; and
 - (b) tested within 12 months of the first installation of the new irrigation infrastructure and afterwards every five years in accordance with the 'Irrigation Code of Practice and Irrigation Design Standards, Irrigation NZ, March 2007' (code of practice) by a suitably qualified independent expert.
58. Within two months of the testing referred to in Condition 57(b) the expert shall prepare a report outlining their findings and shall identify any changes needed to comply with the code of practice. Any such changes shall be implemented within five years from the date of the report. A copy of the report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, within three months of the report being completed.
59. If existing irrigation infrastructure is being used, the consent holder shall obtain an evaluation report prepared by a suitably qualified person, on the following terms:
- (a) The evaluation shall determine the system's current performance in accordance with the Code of Practice for Irrigation Evaluation.
 - (b) This report shall be obtained within three months of the first exercise of the consent.

- (c) Any recommendations identified in the report shall be implemented within five years from the date of receipt of the report.
- (d) A copy of the report shall be forwarded to the Canterbury Regional Council within three months of the report being completed.

Fertigation

- 60. The irrigation system used in association with taking water in terms of this permit shall not be used to distribute effluent, fertiliser, or any other added contaminant, unless one of the following is installed upstream of the point of addition of the effluent, fertiliser or other added contaminant:
 - (a) a reduced pressure zone device (RPZD), or
 - (b) a pressure vacuum breaker (PVB), or
 - (c) an air gap backflow prevention system
- 61. Installation of a RPZD or a PVB shall be in accordance with section 9 (PVB) or section 12 (RPZD) of Australian/New Zealand Standard AS/NZS 2845.1 Water supply - Backflow prevention devices, Part 1: Materials, design and performance requirements, or an equivalent standard.
- 62. An air gap backflow prevention system shall have an unobstructed vertical air gap separation of at least twice the diameter of the inlet pipe, from the lowest point of the inlet pipe to the flood level rim of the receptacle into which it discharges.
- 63. Field testing and maintenance shall be carried out of an RPZD or a PVB at commissioning of the use of the system for application of effluent or fertiliser and annually afterwards, in accordance with AS 2845.3 Water supply—Backflow prevention devices, Part 3: Field testing and maintenance, or an equivalent standard.
- 64. An air gap backflow prevention system shall be tested at commissioning and annually afterwards. Maintenance shall be undertaken as necessary to ensure that backflow prevention is effective.
- 65. Installation, testing, and maintenance shall be undertaken by a suitably qualified person. A report on the annual testing shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two weeks of initial commissioning and within two weeks of each annual testing. Each report shall be accompanied with the name, qualifications and experience of the person who undertook the installation, testing or maintenance.

River water quality monitoring and response

- 66. The water quality of the two surface water sub catchments for (1) land west of Mary Range (Pūkaki Flats North): ((a) Tekapo River sub-catchment; and (b) Pūkaki River sub-catchment); and for (2) land east of Mary Range (Mary Range Farming in the Mary Burn catchment) shall be monitored within 6 months of the first exercise of this consent as follows:
 - (a) The location for monitoring shall be as follows unless minor changes are required to ensure that monitoring occurs upstream of all intakes and downstream of the irrigation area to appropriately monitor the localised river effects arising from the exercise of this consent:
 - iii. Map reference: NZMS 260 H38: 8935-5185 (NZTopo50 BZ16: 7945-9020) (known as "Iron Bridge" (Tekapo upstream)
 - iv. Map reference: NZMS 260 H39: 8725-4800 (NZTopo50 BZ16: 7729-8635) (Tekapo downstream).
 - (b) Water quality variables monitored shall include:
 - viii. dissolved inorganic nitrogen (DIN);

- ix. dissolved reactive phosphorus (DRP);
 - x. dissolved oxygen;
 - xi. conductivity;
 - xii. turbidity;
 - xiii. periphyton biomass as chlorophyll *a* per square metre (chl *a*); and
 - xiv. *E. Coli*.
- (c) This monitoring may be carried out on an individual basis, or may be prepared in collaboration with other consent holders, or on a collective basis by a suitable independent body appointed by all relevant consent holders in the sub catchment.
- (d) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.
- (e) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring river water quality and periphyton biomass. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.
- (f) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person who demonstrates that they understand the appropriate methods to use for surface water quality sampling, including preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.
- (g) The laboratory undertaking analyses shall be accredited for those analyses by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ.
- (h) The results of all sampling shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of reports from the laboratory that undertook the analyses.
67. If the monitoring undertaken in accordance with Condition 66 shows that the average sample result for either or the two monitoring sites specified in Condition 66 over the period December to April is greater than 0.14 mg/L of DIN; or 0.006 mg/L DRP; or 90 mg chl *a*/ m² (early warning trigger) but does not exceed 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl *a*/ m² (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the early warning trigger.
68. The reports referred to in Condition 67 and 72 shall:
- (a) be prepared by an expert review panel consisting of two qualified and experienced independent scientists. One of the scientists shall be nominated by the Canterbury Regional Council, and the other shall be appointed by the consent holder; and
 - (b) include the experts' conclusion on whether the exceedance(s) were as a result of natural influences, one off events, or in whole or part by nutrient loss associated with the irrigation authorised by this consent; and
 - (c) include an assessment as to whether the exceedance measured by the monitoring is likely to continue; and
 - (d) be completed by 30 July following the sampling; and
 - (e) be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.

69. If both the authors of the report prepared in accordance with Condition 68 conclude, after considering all the relevant available information (including on-site monitoring, sub-catchment monitoring, and catchment resource consent compliance and audit reports made available by the Canterbury Regional Council) that either:
- (a) the cause of the breach of the early warning trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent; or
 - (b) that it is unlikely that there is a trend towards exceedance of the environmental standard trigger pertaining to the downstream Tekapo River monitoring sites,
- then no further action needs to be undertaken by the consent holder.
70. If Condition 69 is not satisfied, then:
- (a) the NDA, as specified in Condition 30, shall be reduced by 5% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the total authorised irrigation area developed for irrigation at the time of the exceedance under this resource consent divided by the total farm area (i.e. 2,400 irrigated hectares divided by the total farm area of 6470.33 hectares; and,
 - (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 71.
71. In relation to the Remedial Action Plan referred to in Condition 70(b) and 74(b)(b):
- (a) It shall set out the methods and timeframes for altering and/or adapting farm land use practices to ensure that the exceedance in the early warning trigger pertaining to the monitoring site, is returned as soon as practicable to and maintained below the average sample results of 0.14 mg/L of DIN; or 0.006 mg/L of DRP; or 90 mg chl a/ m² (early warning trigger) for the monitoring site, over the period December to April
 - (b) It shall be prepared by a suitably qualified and experienced person using Overseer or an equivalent method to demonstrate that the actions to be undertaken will achieve the necessary nutrient reductions as soon as practicable.
 - (c) If the Remedial Action Plan is prepared in collaboration with other consent holders who are required to prepare a Remedial Action Plan for this sub catchment a common Remedial Action Plan shall be deemed to comply with this condition.
 - (d) Any actions required by the Remedial Action Plan shall be incorporated into the consent holder's FEMP. The amended FEMP shall be implemented as soon as physically possible.
 - (e) The consent holder shall provide the Canterbury Regional Council with the Remedial Action Plan and an amended FEMP upon request.
72. If the monitoring undertaken in accordance with Condition 66 shows that the average sample result for either of the monitoring sites specified in Condition 66 over the period December to April is greater than 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl a/ m² (environmental standard trigger), then the consent holder shall commission a report into the cause of the breach of the environmental standard trigger. This report shall satisfy the requirements specified in Condition 68
73. If both the authors of the report prepared in accordance with Condition 72 conclude, after considering all the relevant available information, including on-site monitoring, sub-catchment monitoring, and catchment resource consent compliance and audit reports made available by the Canterbury Regional Council, that the cause of the breach of the environmental standard trigger was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent, then no further action needs to be undertaken by the consent holder.
74. If the report prepared in accordance with Condition 72 concludes that the environmental standard trigger has been exceeded because of farm land use practices, then:

- (a) the NDA, as specified in Condition 3029, shall be reduced by 10% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (at the time of the exceedance) under this resource consent divided by the total farm area (i.e. 2400 irrigated hectares divided by the total farm area of 6470.33 hectares); and
 - (b) the consent holder shall prepare and implement a Remedial Action Plan in accordance with Condition 71.
75. If a required reduction in nutrient load is in effect under Condition 70(a) or 74(a) and monitoring for that period shows that the average sample results for the downstream Tekapo River monitoring site over the period December to April is:
- (a) greater than 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl *a*/ m² (environmental standard trigger), then there shall be a further NDA reduction of 10% x IPF for the subsequent irrigation season.
 - (b) less than 0.18 mg/L of DIN; or 0.007 mg/L DRP; or 120 mg chl *a*/ m² (environmental standard trigger), but greater than 0.14 mg/L of DIN; or 0.006 mg/L of DRP; or 90 mg chl *a*/ m² (early warning trigger), then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.
 - (c) less than 0.14 mg/L of DIN; or 0.006 mg/L of DRP; or 90 mg chl *a*/ m² (early warning trigger), then for the subsequent season no NDA reduction shall be required under this condition, and the full NDA for the property, as specified in Condition 30 shall be restored.

Lake water quality monitoring and response

76. The water quality of the Haldon (Northern) Arm of Lake Benmore and Lower Lake Benmore shall be monitored in accordance with this condition from the commencement of consent as follows:
- (a) Locations:
 - iii. Haldon (Northern) Arm, Map reference: NZMS 260 H39: 8823-3531
 - iv. Lower Lake Benmore, Map reference: NZMS 260 H39:8802-2371
 - (b) Depths: depth integrated 0-10m, 25m, 50m
 - (c) Water quality variables:
 - x. total nitrogen;
 - xi. ammonia;
 - xii. nitrate;
 - xiii. nitrite;
 - xiv. total Kjeldahl nitrogen;
 - xv. total phosphorus;
 - xvi. dissolved reactive phosphorus;
 - xvii. Secchi disc depth; and
 - xviii. chlorophyll *a*.
 - (d) Calculated key water quality variable: Trophic Lake Index (TLI), using the following equations:
 - v. $TLI_c = 2.22 + 2.54 \log(\text{chlorophyll } a)$

vi. $TLp = 0.218 + 2.92 \log (\text{total phosphorus})$

vii. $TLn = -3.61 + 3.01 \log (\text{total nitrogen})$

viii. $TLI = \Sigma (TLc + TLp + TLn)/3$

- (e) Frequency of monitoring: Once per month from 01 December to 30 April each year, with a minimum of three weeks between sampling.
- (f) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring lake water quality. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.
- (g) The water quality monitoring shall be undertaken by a suitably qualified and/or experienced person that demonstrates that they understand the appropriate methods to use for lake water quality sampling, including depth integrated sampling, and preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.
- (h) The laboratory undertaking analyses shall be accredited for those analyses by International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ and shall be capable of analysing the variables listed in subparagraph c above with detection limits generally recognised by the scientific community as appropriate for oligotrophic lakes.
- (i) The results of all sampling including the calculated average summer TLI, shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of reports from the laboratory that undertook the analyses.
77. If the monitoring undertaken in accordance with Condition 76 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Haldon Arm monitoring site or the Lower Benmore monitoring site over the period December to April is greater than 2.75 (early warning trigger) but does not exceed 3.0 (environmental standard trigger), then:
- (a) the NDA, as specified in Condition 30, shall be reduced by 5% x the Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (i.e. 2400 irrigated hectares divided by the total farm area of 6470.33 hectares); and
- (b) a report into the cause of the breach of the early warning trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.
78. If a reduction in nutrient loading is required under Condition 77(a) and monitoring in the period that that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for the monitoring site over the period December to April:
- (a) continues to be greater than 2.75 but does not exceed 3.0 then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.
- (b) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 30 shall be restored.
79. If the monitoring undertaken in accordance with Condition 76 shows that the average TLI for the 1 - 10 m depth integrated samples for either the Haldon Arm monitoring site or the Lower Benmore monitoring site monitoring site over the period December to April is greater than 3.0 (environmental standard trigger), then

- (a) the NDA, as specified in Condition 30, shall be reduced by 10% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area under irrigation (i.e. 2400 irrigated hectares divided by the total farm area of 6470.33 hectares); and
- (b) a report into the cause of the breach of the environmental standard trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.
80. If a reduction in nutrient loading is required under Condition 79(a) and monitoring in the period that that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for either the Haldon Arm monitoring site or the Lower Benmore monitoring site over the period December to April:
- (a) continues to be greater than 3.0 then there shall be a further NDA reduction of 15% x IPF for the subsequent irrigation season and rising to 20% compounding reductions for any further irrigation season.
- (b) continues to be greater than 2.75 but does not exceed 3.0 then there shall be a further NDA reduction of 5% x IPF for the subsequent irrigation season.
- (c) is less than 2.75, then for the subsequent season the full NDA for the property, as specified in Condition 30 shall be restored.
81. The nutrient load reductions and investigation referred to in Conditions 77 to 80 inclusive shall not be required if a two person expert scientist panel (with one expert nominated by the Canterbury Regional Council) both conclude after considering all the relevant available information (including catchment resource consent compliance, FEMP compliance monitoring pertaining to this consent and audit reports made available by the Canterbury Regional Council) that the cause of the breach of the early warning trigger or environmental standard (as applicable) was unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent.

Surrender of existing consents

82. Prior to the exercise of this consent, the consent holder will complete all necessary steps to surrender that part of water permit CRC011554 utilised to irrigate some 51 ha on Simons Pass Station with water from Mary Burn.

Review of conditions

83. The Canterbury Regional Council may, once per year, on any of the last five working days of March or July serve notice of its intention to review the conditions of this resource consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage.

Lapse

84. The lapsing date for the purposes of section 125 of the Resource Management Act shall be five years from the commencement of this consent.

Advice notes:

- *In relation to Condition 2, the Waitaki Power Scheme means the works including hydraulic control structures, dams, canals, water diversions, penstocks, spill weirs, spill gates, bypass valves, sluice gates, power stations and generating plant, associated ancillary land and structures and resource consents and other rights held by operator/s of the Waitaki Power Scheme to utilise the waters and tributary inflows of Lakes Tekapo, George Scott, Pūkaki, Ōhau, Ruataniwha, Benmore, Aviemore, and Waitaki to generate electricity.*

- *In relation to the lake monitoring required under Condition 76, it is anticipated that all consent holders subject to this condition would coordinate and cooperate together to ensure that the lake water quality monitoring is undertaken and the costs of that monitoring is shared between those consent holders. The Canterbury Regional Council may provide resources to facilitate that coordination and recover the costs of that facilitation from the relevant resource consent holders as a cost of supervising and administering the resource consents. Any non-compliance with water quality monitoring requirements would be a matter for all relevant consent holders and may be the subject of enforcement proceedings.*
- *The discharge of effluent, fertiliser or any contaminant would require authorisation as a permitted activity or via a discharge permit. Contact the Canterbury Regional Council for advice on the relevant regional rules.*
- *If any additional land use consents are required to carry out the proposed activity, those consents must be obtained before giving effect to this consent.*

