IN THE ENVIRONMENT COURT
AT CHRISTCHURCH

I TE KŌTI TAIAO O AOTEAROA
KI ŌTAUTAHI

Decision No. [2024] NZEnvC 082

IN THE MATTER	of an appeal under s 120 of the Resource Management Act 1991
BETWEEN	NSK FARMING LIMITED
	(ENV-2021-CHC-000021)
	Appellant/ Applicant
AND	CANTERBURY REGIONAL COUNCIL
	Respondent

Court:	Judge L J Semple sitting alone under s 279 of the Act
Hearing:	In chambers at Wellington
Last case event:	9 April 2024
Date of Decision: (On the papers)	18 April 2024
Date of Issue:	18 April 2024

CONSENT ORDER

A: Under s 279(1)(b) of the Resource Management Act 1991, the Environment Court, by consent, orders that:

(1) the appeal is allowed and resource consent CRC145237 is granted subject to:

(a) the conditions, Appendix CRC145237 – Schedule 7 Farm Environment Plan and Schedule A marked as **Annexure A**;

(b) Plan CRC145237A – Site Overview;

(c) Plan CRC145237B - Dam Block;

(d) Plan CRC145237C - Home Block;

(e) Plan CRC145237D - Matagouri Habitat Area; and

(f) Plan CRC145237E - Localised Water Quality Monitoring Sites;

- all of which attach to and form part of this consent order.

(2) the appeal is otherwise dismissed;

B: Under s 285 of the Resource Management Act 1991, there is no order as to costs.

REASONS

Introduction

[1] This proceeding concerns the appeal by NSK Farming Ltd (NSK) against the decision by Canterbury Regional Council (the Council) to decline NSK's resource consent application CRC145237 to take and use water from a storage dam for irrigation of 500 hectares at 36 Gormans Road and adjacent land parcels, Hakataramea Valley.

[2] The key issues which arose in the Council's hearing and which were subject to further consideration through the appeal process related to the potential cumulative effects of the proposed increase in rate and annual volume of water to be taken from NSK's storage dam for irrigation on freshwater quality and the ecological health of the Hakataramea River.

[3] A preliminary hearing on legal issues arising from the appeal was held on 12 July 2022, and the substantive hearing of the appeal was part-heard between 1 and 5 May 2023. An Environment Commissioner-only conference was subsequently held

on 5 September 2023. Following the conference, the parties reached agreement on conditions of consent that settle the appeal.

[4] Counsel for NSK and the Council confirm that the conditions have been informed by advice from, and reviewed by, suitably qualified experts in hydrology, terrestrial ecology, freshwater ecology, freshwater quality, Overseer and regional planning employed or engaged by NSK and the Council.

Other relevant matters

[5] I considered the consent memorandum of the parties dated 8 February 2024, which proposed to resolve the appeals. I issued a minute dated 23 February 2024 in which I raised a number of matters concerning conditions and the timing of the parties' proposal to vary the minimum flow condition in a related diversion consent. The parties responded by way of joint memorandum dated 9 April 2024. The parties have amended the conditions to address the matters raised in the Court's minute. The parties advise that the application to vary the related diversion consent has been lodged.

[6] Te Rūnanga o Arowhenua gave notice of intention to become a party under s 274 of the Resource Management Act 1991, and signed both the consent memorandum, and the joint memorandum dated 9 April 2024.

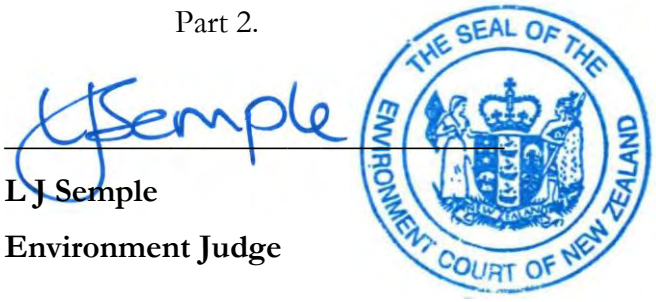
[7] I have reviewed the amended conditions attached to the joint memorandum dated 9 April 2024 and am satisfied that the amendments adequately answer the Court's questions. Other than correcting some minor typographical errors in the conditions (see condition index (condition 5), condition 5(c)(i) and condition 21(a)) the conditions now replicated in Annexure A to this Consent Order are in accordance with the joint memorandum.

Orders

[8] The Court is making this order under s 279(1) of the Act, such order being by consent, rather than representing a decision or determination on the merits pursuant to s 297. The Court understands for present purposes that:

(a) all parties to the proceedings have executed the consent memorandum requesting this order;

(b) all parties are satisfied that all matters proposed for the Court's endorsement fall within the Court's jurisdiction, and conform to the relevant requirements and objectives of the Act including, in particular, Part 2.



L J Semple

Environment Judge

Annexure A

REVISED PROPOSED CONDITIONS OF CRC145237

NSK FARMING LIMITED – Take and Use Consent

CRC145237

CONDITIONS OF CONSENT

Expiry Date: 31 July 2035

Condition Index

Description	Condition/Document
Site Overview Plan	CRC145237A
Dam Block Plan	CRC145237B
Home Block Plan	CRC145237C
Matagouri Habitat Area	CRC145237D
Localised Water Quality Monitoring Sites	CRC145237E

Location of take

1. Water used for irrigation under this water permit shall be taken:
   a. From the storage dam authorised under resource consent CRC040988 ("Dam"); and
   b. Between 1 and 3 metres above the bed of the reservoir.

Rate of take and annual volume

2. Water shall be taken at a rate not exceeding 289 litres per second, and 2,700,000 cubic metres between 1st July and the following 30th June.

Water use and area to be irrigated

3. The water taken in accordance with conditions (1) and (2) shall only be used for irrigation of 500 hectares of crops and pasture within the area of land identified as "Irrigation Command Area" in attached plans CRC145237A (Site Overview), CRC145237B (Dam Block) and CRC145237C (Home Block), which form a part of this water permit.

Surrender

4. Before the commencement of irrigation under this water permit (CRC145237), the consent holder shall surrender CRC051766.

Management and Monitoring Plans, Reports and Compliance Information, and Suitably Qualified and Experienced Independent Person

5.
   a. The management plans and reports required by the conditions of this water permit are listed in Table 1 and shall be submitted to the Canterbury Regional Council Attention Regional Lead – Compliance Delivery within the timeframes specified in Table 1.

Table 1: Timeframes for preparing management plans and reports

Management Plan or Report	Timeframe for submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery	Condition
Reservoir Management Plan	At least eighteen months prior to the first diversion of water from Grampian Stream to the Dam under resource consent CRC040989.	6
Riparian Management Plan	At least twelve months prior to the commencement of irrigation under this water permit.	8
Wetland Management Plan	At least twelve months prior to the commencement of irrigation under this water permit.	9
Fish Screen Design Report	At least 30 working days prior to the installation of the fish screen before the commencement of irrigation under this water permit.	10

Management Plan or Report	Timeframe for submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery	Condition
Irrigation Management Plan	Prior to the commencement of irrigation under this water permit, and thereafter by 30 September each year.	21
Farm Environment Plan	Prior to the commencement of irrigation under this water permit.	24
Farm Environment Plan Audit Report	Within 2 months of the completion of the Farm Environment Plan audit.	25

b. The monitoring plans and reports, and compliance information required by the conditions of this water permit are listed in Table 2 and shall be completed and/or submitted to the Canterbury Regional Council, Attention Regional Lead – Compliance Delivery within the timeframes specified in Table 2.

Table 2: Timeframes for completion or submission of monitoring report or compliance information

Monitoring Report or Requirement	Timeframe for completion or submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery	Condition
Records of water taken	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery: a. Each day, no later than the end of the next day; and b. Each water year (1 July - 30 June), no later than one month after the end of that water year.	17
Certification of device or system used for keeping records of water taken	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery: a. Within one month of the installation of each device or system (and subsequent replacement); and b. At 5 yearly intervals thereafter.	17
Backflow preventer test report	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery within two weeks of: a. Installation of backflow preventer; and b. Each annual inspection.	18
Information to demonstrate compliance with Condition 22(a) – Farming Operations (stock numbers)	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery by 30 October each year.	22
Farm Environment Plan audit	Complete within 12 months of the first exercise of this water permit, and thereafter, in accordance with the timeframes specified in Part C of Appendix CRC145237 or replacement FEP audit requirements of the Canterbury Regional Council.	25
Information to demonstrate compliance with Condition (27) – Matagouri Habitat Area	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery within 30 days of information collection: a. Prior to the commencement of irrigation; b. Two years after commencement of irrigation; and	27

Monitoring Report or Requirement	Timeframe for completion or submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery	Condition
	c. At 5 yearly intervals thereafter.	
Land Use Inventory Audit	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery at five yearly intervals.	28
Hakataramea Catchment Monitoring Report	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery by 31 July each year.	29
Commencement of localised water quality monitoring	At least 12 months prior to the commencement of irrigation under this water permit.	30
Qualifications and experience of person(s) sampling localised water quality	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery a. before the commencement of localised water quality monitoring; and b. if the person that carries out the sampling changes during the duration of this water permit.	31
Annual report of localised water quality monitoring	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery by 31 July each year.	32
Commencement of reservoir water quality monitoring	Within one month of the Dam being commissioned	36
Report on first six months of reservoir water quality monitoring	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery within 60 days of the completion of 6 months of reservoir water quality monitoring.	37
Reservoir water quality monitoring report	Submission to Canterbury Regional Council Attention Regional Lead – Compliance Delivery by 31 July each year.	37

c. The following shall apply to any person performing the role of Suitably Qualified and Experienced Independent Person ("SQEIP") in conditions 6, 8, 9, 21 and 31 of this water permit:

i. The consent holder shall submit information on the qualifications and experience of the nominated SQEIP to the Canterbury Regional Council, Attention: Regional Lead – Compliance Delivery prior to undertaking of any monitoring, preparing or certifying any management plan as required by conditions 6, 8, 9, 21 and 31 of this water permit;

ii. Upon receipt of the information required by clause (c)(i) of this condition, the Canterbury Regional Council shall determine whether the SQEIP has or has not met the qualification and experience requirements set out in conditions 6, 8, 9, 21 and 31 of this water permit.

iii. If the Canterbury Regional Council does not respond in writing within 10 working days of receipt of the information submitted by the consent holder the information required by clause (c)(i) of this condition, that person shall be deemed to have the required qualifications and experience.

iv. Any determination by Canterbury Regional Council that the SQEIP does not meet the experience and/or qualification requirements set out in conditions 6, 8, 9, 21 and 31 of this water permit shall be communicated to the consent holder with reasons to assist the consent holder in nominating another person as a SQEIP that meets those requirements.

Advice Note: *Any reference to Canterbury Regional Council: Attention: Regional Lead – Compliance Delivery in this water permit includes any person exercising the same responsibility under a changed position.*

Reservoir Management Plan

6.

a. At least eighteen months prior to the first diversion of water from Grampian Stream to the Dam under resource consent CRC040989, the consent holder must submit to the Canterbury Regional Council, Attention: Regional Lead – Compliance Delivery:

i. A Reservoir Management Plan that has been certified in writing by a SQEIP who is a freshwater scientist with experience in reservoir water quality analysis and the design, construction and testing of artificial destratification systems, and has been determined, or deemed to be determined, by the Canterbury Regional Council as meeting those qualifications in accordance with the process set out in condition (5)(c) of this water permit, as being in accordance with clause (b) of this condition; and

ii. A copy of the SQEIP's written certification of the Reservoir Management Plan.

b. The Reservoir Management Plan required by clause (a) of this condition must be prepared by a SQEIP who is a freshwater scientist with experience in reservoir water quality analysis and the design, construction and testing of artificial destratification systems and include:

i. Measures required to be implemented by the consent holder prior to the reservoir being filled to minimise the build up of nutrients in soils within the Dam Inundation Area (as shown in Plan CRC145237A) and decaying vegetation in the reservoir after filling, including (but not limited to):

A. Avoidance of fertiliser application within the Dam Inundation Area;

B. Reducing vegetation within the Dam Inundation Area as far as practical; and

C. Planting a 12m wide riparian buffer around the Dam Inundation Area;

ii. Details of when the measures outlined in clause (b)(i) of this condition shall be implemented by the consent holder;

iii. A procedure for ensuring that:

A. Conditions (2) and (3) of CRC040989 are complied with in respect of taking water from Grampian Stream; and

B. Condition (4) of CRC040988 is complied with by maintaining a minimum reservoir water level to ensure sufficient storage volume to maintain the residual flow required by that condition downstream of the Dam;

iv. Design plans and operating instructions for an artificial destratification system to minimise the risk of stratification of water within the reservoir when required in accordance with condition (41)(b)(ii); and

v. A certificate signed by the person responsible for designing the artificial destratification system or a person competent in the design and operation of such systems confirming that the design and operating instructions are in accordance with clause (b)(iv) of this condition.

c. The artificial destratification system referred to in clause (b)(iv) of this condition shall be installed and operated in accordance with the design plans and operating instructions forming part of the Reservoir Management Plan and condition (41)(b)(ii).

Advice note:

The purpose of the minimum water level required by clause (b)(iii)(B) of this condition is to allow enough contingency under dry conditions and to avoid potential effects of very low reservoir levels on water quality.

Consultation

7.

a. The consent holder shall provide Te Rūnanga o Arowhenua with an opportunity to be consulted on the matters outlined in clause (b) of this condition for the purpose of informing the preparation of the following documents and any future updates to those documents as required by the conditions of this water permit:

   i. The riparian management plan required by condition (8);

   ii. The wetland management plan required by condition (9);

   iii. The irrigator location plan required as part of the Irrigation Management Plan under condition (21)(b)(ii); and

   iv. Updates or amendments to the Farm Environment Plan for the Property required by conditions (24) and (29)(a)(viii).

b. The matters that the consent holder shall consult Te Rūnanga o Arowhenua on are as follows:

   i. Areas of existing flora and fauna present within the Irrigation Command Area, Riparian Planting Areas and Wetlands A, B and C, including the location and extent of key species, of significance to Māori;

   ii. Water or landform features of significance to Māori;

   iii. Mātauranga Māori as it applies to the Irrigation Command Area, Riparian Planting Areas and Wetlands A, B and C; and

   iv. In relation to the Irrigation Command Area, Riparian Planting Areas and Wetlands A, B and C, Te Rūnanga o Arowhenua's recommendations on:

      A. enhancement and restoration of riparian species, including target areas and species for restoration and rehabilitation;

      B. monitoring the efficacy of riparian and wetland management; and

      C. on-farm practices to manage the potential effects of the take and use of water under this water permit on freshwater resources downstream of the Property.

c. The consent holder shall meet all costs associated with, and incidental to, the preparation of the documents referred to in clause (a) of this condition and future updates or amendments to those documents, including all reasonable costs incurred by Te Rūnanga o Arowhenua in any consultation undertaken in accordance with this condition.

Riparian Management Plan

8.

a. At least 12 months prior to the commencement of irrigation under this water permit, the consent holder shall submit to the Canterbury Regional Council, Regional Lead – Compliance Delivery for the attention of: Science Team Leader - Land Ecology:

   i. A Riparian Management Plan for those areas identified on attached Plans CRC145237B and C as "Riparian Planting Area", which form part of this water permit, that has been certified in writing by a SQEIP who is an ecologist with experience in riparian management and design, and has been determined or deemed to be determined by the Canterbury Regional Council as meeting those qualifications in accordance with condition (5)(c), as being in accordance with clause (b) of this condition; and

   ii. A copy of the SQEIP's written certification of the Riparian Management Plan.

b. The Riparian Management Plan required by clause (a) of this condition shall:

   i. Be for the purpose of reducing nutrient and sediment loadings to surface waterways and restoring native biodiversity and habitat for fauna within and around riparian areas;

   ii. Be prepared by a SQEIP who is an ecologist with experience in riparian management and design;

   iii. Be prepared in consultation with the Canterbury Regional Council – Team Science Leader: Land Ecology and Te Rūnanga o Arowhenua;

   iv. Require the consent holder to:

      A. Erect a permanent fence a minimum setback distance of 12 metres from the edge of any natural, permanently flowing waterway identified as "Riparian Planting Area" on Plans CRC145237B and C;

      B. Erect temporary fencing a minimum distance of 5 metres from any surface waterways within the areas irrigated under this permit that are not referred to in clause (b)(iv)(A) of this condition when stock are grazing adjacent to those surface waterways;

      C. Maintain all fencing in a good state of repair;

      D. Implement a planting plan using eco-sourced local vegetation for:

         1. the fenced areas within or adjoining the Dam Inundation Area within three months of the first filling of the Dam; and

         2. the fenced areas referred to in clause (b)(iv)(A) of this condition at least 6 months prior to the commencement of irrigation under this water permit;

      E. Prevent the application of fertiliser within the fenced areas identified in clauses (b)(iv)(A) and (B) of this condition other than for the establishment of riparian planting;

      F. Take account of the enhancement and restoration recommendations (if any) provided by Te Rūnanga o Arowhenua under condition (7)(b); and

      G. Take account of any current riparian management guidelines produced by Environment Canterbury identifying appropriate plant species for riparian buffers to achieve the purpose of the plan set out in clause (b)(i) of this condition;

   v. Provide details of when the measures outlined in clause (b)(iv) of this water permit shall be implemented by the consent holder; and

   vi. Provide details of how the efficacy of the Riparian Management Plan will be monitored.

Wetland Management Plan

9.

a. At least 12 months prior to the commencement of irrigation under this water permit, the consent holder shall submit to the Canterbury Regional Council, Regional Lead – Compliance Delivery for the attention of Science Team Leader - Land Ecology:

   i. A Wetland Management Plan for Wetlands A and B as shown on attached Plan CRC145237C, which forms part of this water permit that has been certified in writing by a SQEIP who is an ecologist with experience in wetland management and design, and has been determined or deemed to be determined as meeting those qualifications by the Canterbury Regional Council in accordance with condition (5)(c), as being in accordance with clause (b) of this condition; and

   ii. A copy of the SQEIP's written certification of the Wetland Management Plan.

b. The Wetland Management Plan required by clause (a) of this condition shall:

   i. Be prepared by a SQEIP who is an ecologist with experience in wetland management and design;

   ii. Be prepared in consultation with the Canterbury Regional Council – Science Team Leader Land Ecology and Te Rūnanga o Arowhenua in accordance with the requirements of Schedule 2 of the Natural Resource Management (National Environmental Standards for Freshwater) Regulations 2020 or subsequent replacement; and

   iii. Require the consent holder to:

      A. Erect a permanent fence with a minimum setback of 5 metres from the boundaries of Wetlands A and B;

      B. Prevent stock grazing, other than sheep grazing, within the fenced areas referred to in clause (b)(iii)(A) of this condition;

      C. Where riparian enhancement planting is carried out within fenced areas, locally eco-sourced vegetation shall be used;

      D. Prevent the application of fertiliser within the fenced areas required by clause (b)(iii)(A) of this condition other than for the establishment of riparian planting;

      E. Describe suitable means of managing pest species with the wetlands and riparian buffers;

      F. Take into account the enhancement and restoration recommendations (if any) provided by Te Rūnanga o Arowhenua under condition (7)(b); and

      G. Implement a planting plan for the fenced areas which shall include but not be limited to planting of Red Tussock and Tussock Sedge.

Fish Screen

10.

a. All fish screens shall:

   i. be designed or supplied by a SQEIP who is an experienced fisheries ecologist with experience in salmonid and New Zealand native fisheries and in the design, construction and testing of fish exclusion devices;

   ii. prevent fish from passing into the irrigation off-take structure;

   iii. ensure fish remain uninjured in the Dam; and

   iv. be installed prior to the commencement of irrigation under this water permit.

b. At least 30 working days prior to the installation of any fish screen, the consent holder shall provide to Canterbury Regional Council: Attention: Regional Lead – Compliance Delivery for certification a report prepared or authorised by a SQEIP who is an experienced fisheries ecologist with experience in salmonid and New Zealand native fisheries and in the design, construction and testing of fish exclusion devices ("the Report") which:

   i. contains the final design plans for the fish screen(s);

   ii. details how each fish screen will achieve the criteria specified in condition 10(a); and

   iii. contains an effective operation, monitoring and maintenance plan for each fish screen.

11. The installation of any fish screen shall not commence until it is certified in accordance with conditions (12) or (13) by the Canterbury Regional Council.

12. Within 15 working days of receiving the Report, the Canterbury Regional Council shall certify whether or not the Report satisfies the criteria detailed in condition (10)(b); provided that:

    a. Such certification shall not be unreasonably withheld; and

    b. Should no response be provided to the consent holder within 15 working days of Canterbury Regional Council receiving the Report, then the consent holder may commence installing the fish screen(s) on the basis that the Report is deemed to be certified.

13. If the design does not meet the criteria detailed in condition (10)(a) and/or the Report does not comply with condition (10)(b), the design and/or Report shall be revised and resubmitted to the Canterbury Regional Council: Attention: Regional Lead – Compliance Delivery for reconsideration and certification under condition (12) prior to installation.

14. Upon completion of installation, the consent holder shall provide certification from a SQEIP who is an experienced fisheries ecologist with experience in salmonid and New Zealand native fisheries and in the design, construction and testing of fish exclusion devices to Canterbury Regional Council, Attention: Regional Lead – Compliance Delivery, that all installed fish screens have been installed in accordance with condition (10).

15. The fish screen shall be maintained in good working order in accordance with condition (10). Records shall be kept of all inspections, monitoring and maintenance, and those records shall be provided to Canterbury Regional Council: Attention: Regional Lead – Compliance Delivery on request.

16. If the fish screen becomes damaged or requires repair such that it can no longer meet the requirements outlined in condition (10), the consent holder shall:

    a. Stop operating the intake structure so that water does not flow through the fish screen and intake structure;

    b. Not resume operation until conditions (16)(c) and (d) are complied with;

    c. Repair the fish screen so that it operates in accordance with the requirements specified in condition (10); and

    d. Upon repair, provide certification from a SQEIP who is an experienced fisheries ecologist with experience in salmonid and New Zealand native fisheries and in the design, construction and testing of fish exclusion devices to Canterbury Regional Council: Attention: Regional Lead - Compliance Delivery and to Te Rūnanga of Ngāi Tahu, Te Rūnanga o Arowhenua, Te Rūnanga o Waihao, Aoraki Environmental Consultancy Limited or other agency nominated by Te Rūnanga o Arowhenua or Te Rūnanga o Waihao, that the damaged fish screen has been repaired.

Records of water taken

17.

a. The consent holder must keep records that provide a continuous measurement of any water taken under this permit.

b. The records must:

   i. comprise measurements, in cubic metres, of the volume of water taken in each 15-minute period;

   ii. if no water is taken, specify the volume of water taken as zero cubic metres;

   iii. be kept in a format that, in the opinion of the Canterbury Regional Council, is suitable for auditing;

   iv. be kept using a device or system that measures the volume of water taken to within 5 percent of the actual volume taken, and is:

      A. able to provide data in a form suitable for electronic storage;

      B. suited to the qualities of the water it is measuring;

      C. sealed and is as tamper-proof as practicable;

      D. installed at each location from which water may be taken under this water permit; and

      E. verified as accurate.

c. The consent holder must provide the records, electronically, to the Canterbury Regional Council, Attention: Regional Lead - Compliance Delivery, that cover:

   i. each day, no later than the end of the next day; and

   ii. each water year (1 July - 30 June), no later than one month after the end of that water year.

d. Within one month of the installation of each device or system (and any subsequent replacement) and at five-yearly intervals thereafter, and at any time when requested by the Canterbury Regional Council, the consent holder shall provide to the Canterbury Regional Council, Attention: Regional Lead - Compliance Delivery, a certification that:

   i. the device or system that is keeping records is verified as accurate;

   ii. the verification has been performed by a SQEIP with experience in testing water recording devices; and

   iii. states the verifier's qualification.

Advice notes:

(1) For clause (b)(iii) of this condition see www.ecan.govt.nz for the latest version 'f 'Data Management Guidelines - Water Use'.

(2) All flow and water level measurement and recording, including equipment, systems and procedures must be installed, operated and maintained at all times in accordance with any operative National Environmental Monitoring Standards.

Backflow preventer

18. If the irrigation system is used to distribute diluted effluent, fertiliser or any other added contaminants, the consent holder must ensure:

a. An effective backflow prevention device is installed and operated within the irrigation pump outlet plumbing or within the irrigation mainline to prevent the backflow of contaminants into the reservoir;

b. The backflow prevention device is tested at the time of installation and annually thereafter by a SQEIP who has experience in testing backflow protection devices in accordance with Canterbury Regional Council approved test methods for the device used; and

c. The test report is provided to the Canterbury Regional Council, Attention: Regional Lead - Compliance Delivery, within two weeks of installation and each annual inspection.

Efficient use of water

19. 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, where in this condition, field capacity means the soil moisture content in the crop root zone after drainage (1-3 days) after thorough wetting (such as a large rainfall event that exceeds the root zone water holding capacity when the macro pores contain air and micro pores water);

b. Avoid leakage from pipes and structures;

c. Avoid the application of water onto non-productive land such as impermeable surfaces and river or stream riparian areas; and

d. Avoid surface run off of irrigation water in or from irrigated areas.

Irrigation Infrastructure Design and Operation

20.

a. All new irrigation infrastructure shall be designed and accredited by a SQEIP with a minimum of 10 years' experience in irrigation system design, implementation and operation, in accordance with the IrrigationNZ Irrigation Design Code of Practice 2013 (or any subsequent replacements) and the IrrigationNZ Irrigation Design Standards 2013 (or any subsequent replacement) and installed in accordance with the accredited design.

b. The irrigation system shall not be a spray line, travelling gun, fixed or rotating boom or border dyke irrigation system.

c. The irrigation system shall be designed and operated to ensure:

i. The use of water for irrigation does not occur within 100m of the boundary of Wetlands A, B, and C as marked on Plan CRC145237C attached to and forming part of this water permit as delineated by the methodology described in "Wetland Delineation Protocols" Ministry for the Environment publication number ME 1515 (or any replacement thereof);

ii. The use of water for irrigation complies with any setback distances or other requirements in relation to the powerline marked on the Plan CRC145237C attached to and forming part of this water permit in any Network Waitaki standards or guidelines; and

iii. Surface runoff of irrigation water or spray drift does not occur beyond the areas irrigated under this water permit or enter the areas identified in clauses (c)(i) and (ii) of this condition.

Irrigation Management Plan

21.

a. Prior to the commencement of irrigation under this water permit, the consent holder shall submit to the Canterbury Regional Council: Attention Regional Lead – Compliance Delivery:

   i. An Irrigation Management Plan that has been certified in writing by a SQEIP who has a minimum of 10 years' experience in irrigation systems design, implementation and operation, and has been determined or deemed to be determined by the Canterbury Regional Council as meeting that experience and qualifications in accordance with the process set out in condition (5)(c) of this water permit, as being in accordance with clause (b) of this condition; and

   ii. A copy of the SQEIP's written certification of the Irrigation Management Plan.

b. The Irrigation Management Plan required by clause (a) of this condition shall be prepared by a SQEIP with a minimum of 10 years' experience in irrigation systems design, implementation and operation contain:

   i. A soil moisture monitoring plan showing the location of soil moisture monitoring sites to inform scheduling and meet the requirements of condition 19(a) and (d) of this water permit;

   ii. A plan showing the location of pivot and linear irrigators, which takes into account any recommendations provided by Te Rūnanga o Arowhenua under condition (7)(b); and

   iii. Methods and procedures that will be undertaken by the consent holder to ensure the irrigation system is operated and maintained to meet the requirements of condition (20)(c).

c. The Irrigation Management Plan must be reviewed and updated annually. A copy of the updated Irrigation Management Plan must be provided to the Canterbury Regional Council: Attention Regional Lead –Compliance Delivery by 30 September each year.

Farming operations

22.

a. The consent holder shall manage the farming operation to ensure that:

   i. The number of breeding cows (mixed age) and breeding ewes (mixed age) wintered on the Property shown on the attached plan CRC145237 ("the Property") does not increase by more than 5% above the number of breeding cows (mixed age) and breeding ewes (mixed age), specified in the *Overseer Farm Detail Report - Year ending 2016 (v1) (v2*) – Published on 29 November 2021; and

   ii. Animals grazed on the irrigated area of the Property shall be either the farm's own breeding stock, breeding replacements or offspring of those animals.

b. The consent holder shall demonstrate annually compliance with clause (a) of this condition and this information shall be provided to Canterbury Regional Council: Attention Regional Lead –Compliance Delivery, by 30 October each year.

Advice Note: *The Overseer Farm Details Report – Year ending 2016 (v1) (v2) inputs can be found in Canterbury Regional Council electronic PDF file, reference C23C/241459, referred to as "CRC203263, Overseer Farm details report – Published 29 November 2021".*

Fertiliser

23.

a. Fertiliser must be applied in accordance with a nationally recognised quality assurance program for fertiliser application for specific crop and pasture types identified in the Farm Environment Plan required by condition (24). For the purposes of this condition a quality assurance program is:

   i. The New Zealand Fertiliser Manufacturers' Research Association Code of Practice for Fertiliser Use;

   ii. The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07; or

   iii. Any other method approved by the Canterbury Regional Council.

b. Without limiting clause (a) of this condition, the application of fertiliser must:

   i. Only occur during suitable weather and soil moisture conditions;

   ii. Reflect soil types;

   iii. Not increase soil nutrients above plant optimums as confirmed by soil testing; and

   iv. Not occur:

      A. within the Dam Inundation Area; or

      B. within the fenced areas identified in condition (8)(b)(iv)(A) and (B) and condition (9)(b)(iii)(A) other than for the establishment of riparian planting.

Farm Environment Plan

24.

a. The consent holder shall maintain and implement a Farm Environment Plan ("FEP") in accordance with Appendix CRC145237, which forms part of this water permit.

b. The consent holder shall take into account any recommendations provided by Te Rūnanga o Arowhenua under condition (7)(b) when preparing the FEP required by clause (a) of this condition.

c. On farm practice shall be in accordance with the FEP at all times and the FEP shall be updated as necessary to reflect any changes in the farming operation over time.

d. A copy of the FEP addressing all matters in Appendix CRC145237 shall be provided to the Canterbury Regional Council: Attention: Regional Lead - Compliance Delivery prior to the commencement of irrigation.

e. The FEP must at all times be consistent with the conditions of this water permit.

Advice Note: *Any FEP provided for the Property under any other consent or any other regulatory requirements that is in accordance with Appendix A will satisfy clause (a) of this condition. Other consents for the Property may have additional FEP requirements.*

25.

a. The FEP shall be audited within 12 months of the first exercise of this water permit in accordance with Part C of Appendix CRC145237.

b. Subsequent FEP audits shall be undertaken within the timeframes specified in Part C of Appendix CRC145237 or replacement FEP audit requirements of the Canterbury Regional Council.

c. A copy of the FEP audits shall be provided to the Canterbury Regional Council: Attention: Regional Lead - Compliance Delivery within two months of each audit being completed.

26. The farm shall be managed to achieve and maintain a FEP audit grade of B grade at the minimum, as assigned in accordance with Part C of Appendix One. The farm shall be managed such that it is not assigned any C or D grades.

Matagouri Habitat Area

27.

a. Within the matagouri habitat area ("Matagouri Habitat Area") identified on attached plans CRC145237B and CRC145237D, which form part of this water permit, there shall be no:

   i. Spraying;

   ii. Cultivation;

   iii. Direct drilling; or

   iv. Removal of individual matagouri plants.

b. There shall be no mechanical disturbance within the stream channel flowing through the Matagouri Habitat Area, with the exception of disturbance required for maintenance of farm tracks existing at the commencement of this water permit.

c. The consent holder shall ensure that the habitat conditions existing prior to the commencement of irrigation of the Matagouri Habitat Area are maintained or improved.

d. To demonstrate compliance with clause (c) of this condition, the following shall be provided:

   i. Photos of the overall extent of the Matagouri Habitat Area; and

   ii. Photos of representative habitat throughout the Matagouri Habitat Area, including but not limited to vegetation height, ground cover;

   which are taken from permanent photo points established inside and outside of the Matagouri Habitat Area.

e. The information required under clause (d) of this condition shall be collected:

   i. Prior to the commencement of irrigation;

   ii. Two years after commencement of irrigation; and

   iii. At 5 yearly intervals thereafter.

f. The consent holder shall provide the information collected in clause (d) of this condition to Canterbury Regional Council: Attention: Regional Lead - Compliance Delivery within 30 days of the information being collected in accordance with clause (e) of this condition.

g. Should the information collected under clause (d) of this condition identify deterioration in habitat conditions as a result of irrigation under this water permit:

   i. A report, prepared by a SQEIP who is an ecologist and has experience in ecological habitat monitoring, shall accompany the information required to be provided by clause (e) of this condition and include measures to be undertaken to remediate the identified deterioration, a timeframe for implementing such measures, and methods of monitoring the performance of them; and

ii. The consent holder shall implement the measured recommended in the report required by condition g(i) within the timeframes set out in that report.

Advice notes:

The consent holder shall ensure any additional consents are obtained before undertaking maintenance on tracks within the bed and banks of the stream referred to in clause (b) of this condition.

Hakataramea Catchment Water Quality and Ecological Health Monitoring

Advice note: *The baseline monitoring completed in 2010 (CRC File ref. CRC145237 Document Number C24C/9204) in accordance with conditions 10 and 13 of CRC051766 forms the basis for the monitoring required by conditions 28 and 29.*

28.

a. The consent holder shall undertake annual monitoring for the period 31 July to 30 June each year in accordance with the Hakataramea Valley On-Going Water Quality Programme dated July 2014 and saved to Canterbury Regional Council files as CRC File ref. CRC145237 Document Number C24C/9204 ("Hakataramea Catchment Monitoring Programme") or any subsequent replacement, which meets the requirements of Schedule A attached to and forming part of this water permit and has been designed to:

   i. Obtain a definitive and representative assessment of any effects of the take and use of water authorised by this water permit on the state of the environment of the Hakataramea River; and

   ii. Without limiting the objective at clause (a)(i) of this condition, provide information which shall be used to determine whether the exercise of this water permit is a cause or contributing cause to changes in:

      A. Periphyton in the Hakataramea River;

      B. Macro-invertebrate species in the surface water bodies;

      C. Native fish and salmonids; and

      D. Physical and chemical groundwater and surface water quality.

b. Following the annual review and analysis of monitoring results as required by clause (a) of this condition, the personnel engaged to design and carry out the monitoring programme shall review and make recommendations on any modifications considered necessary to the Hakataramea Catchment Monitoring Programme to achieve the objectives set out in clause (a) of this condition, including (but not limited to):

   i. Monitoring frequency; and

   ii. The matters listed in Schedule A.

c. Any recommendations made under clause (b) of this condition shall be implemented by the consent holder within 2 months of receiving the recommendation.

d. At five yearly intervals for the duration of the water permit the consent holder shall undertake an audit of land use changes in accordance with the Land Use Inventory in Schedule A identifying gross changes.

29.

a. The consent holder shall, by 31 July each year, provide a report ("Hakataramea Catchment Monitoring Report") prepared by a suitably qualified person to the Canterbury Regional Council, Attention: Regional Lead – Compliance Delivery, which shall:

i. Set out the results of the annual monitoring undertaken in accordance with condition (28);

ii. Summarise all the data collected as required under condition (28) of this water permit (including graphical presentation and statistical summations of monitoring data) and analyse the information in terms of compliance of this water permit;

iii. Highlight and discuss any environmental trends in the results;

iv. Compare results obtained over the reporting period with the results obtained from previous reporting periods;

v. Audit compliance with the provisions of the consent holder's FEP in accordance with the relevant conditions of any Farming Land Use Resource Consent(s) held for the Property and condition (24) of this water permit to identify whether the farming land use activities being undertaken on the Property may have influenced the monitoring results;

vi. Report and discuss any operational difficulties, changes or improvements to the FEP which would result in a notable variation of water quality;

vii. List any maintenance works needed, proposed or undertaken to ensure compliance with the conditions of this water permit;

viii. Detail any remedial steps to be incorporated by amendment to the FEP for the Property in response to the results of the baseline survey and monitoring program, and methods of monitoring the performance of them; and

ix. Detail any changes required to Schedule A of this water permit.

b. Any remedial steps identified in the report prepared under clause (a)(viii) of this condition shall take effect immediately.

c. Within three months of completion of the Hakataramea Catchment Monitoring Report, the consent holder shall provide a copy of Monitoring Report to:

i. the Director-General of the Department of Conservation;

ii. Te Rūnanga o Ngāi Tahu;

iii. Te Rūnanga o Arowhenua;

iv. Te Rūnanga o Waihao;

v. Aoraki Environmental Consultancy Limited or other nominated agent for the organisations referred to in clause (c)(iii) and (iv) of this condition; and

vi. Central South Island Fish and Game Council.

Localised Water Quality and Ecological Health Monitoring

30.

a. For the period beginning at least 12 months prior to the commencement of irrigation under this water permit, and continuing for the duration of this permit, the consent holder shall carry out water quality monitoring on:

i. Grampian Stream;

ii. Gorman Stream; and

iii. the Hakataramea River;

at the locations marked on attached Plan CRC145237E attached to and forming part of this water permit at the following map references (NZTM 2000):

Site Name	E	N
Grampian upstream	1407877	5080213
Grampian downstream	1414534	5074416
Gorman upstream	1412132	5071955
Gormans downstream	1415094	5071667
Hakataramea River at Cattle Creek	1415634	5068990
Hakataramea at upstream Grampian	1414533	5074716

b. The water quality monitoring undertaken in accordance with clause (a) of this condition shall include sampling of the following variables:

   i. Dissolved inorganic nitrogen;

   ii. Dissolved reactive phosphorous;

   iii. Total Nitrogen;

   iv. Total Phosphorous;

   v. *Escherichia coli*;

   vi. Total suspended solids;

   vii. Dissolved oxygen (saturation);

   viii. Water temperature;

   ix. Deposited fine sediment;

   x. Periphyton cover;

   xi. Benthic chlorophyll a;

   xii. MCI; and

   xiii. QMCI.

c. Sampling of MCI and QMCI shall occur once per year between November and April.

d. Sampling of all other parameters set out in clause (b) of this condition shall occur monthly, with a minimum of three weeks between sampling events.

31.

a. The monitoring required by condition (30) of this water permit shall be undertaken by a SQEIP who is determined, or is deemed to be determined, by the Canterbury Regional Council as understanding the appropriate methods to use for surface water quality sampling, including preservation of samples, in accordance with the process set out in condition (5)(c) of this water permit.

b. The person that undertakes the monitoring shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods.

c. 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.

32. The consent holder shall, by 31 July each year, provide a report (“Localised Water Quality Monitoring Report") prepared by SQEIP who is a freshwater scientist with experience in

freshwater quality analysis to the Canterbury Regional Council, Attention: Regional Lead – Compliance Delivery, which shall:

a. Set out the results of the monitoring undertaken in accordance with conditions (30) and (31). This shall include copies of reports from the laboratory that undertook the analyses of water quality samples; and

b. Analyse the water quality data collected in accordance with condition (30)(a) to determine whether there has been a statistically significant increase in the levels of the variables listed in condition (30)(b) between each upstream and downstream sampling sites indicating a deterioration in water quality between those sites.

33.

a. If the annual audit undertaken in accordance with condition (32) indicates deterioration of water quality between any of the upstream and downstream sampling sites, the consent holder shall within one month of receiving the annual report required by condition (32), commission a report into the cause of the deterioration in water quality.

b. The report required under clause (a) of this condition shall at a minimum:

   i. Be prepared and peer reviewed by SQEIPs who are freshwater scientists with experience in freshwater quality analysis, or reviewed by Canterbury Regional Council Scientist(s);

   ii. Include the experts' conclusion on whether the deterioration in water quality was as a result of natural influences, influences outside the consent holder's control, or in whole or part by the use of water authorised by this water permit, by nutrient loss associated with resource consent CRC203263 (or any replacement Farming Land Use Consent), or as a result of the discharge of residual flow from the Dam required by condition (4) of CRC040988;

   iii. Include an assessment as to whether the deterioration in water quality identified by the monitoring is likely to continue; and

   iv. Be completed and provided to the Canterbury Regional Council, Attention: Regional Lead: Compliance Delivery, by 31 July following the sampling.

34. If the experts' conclusions in the report required by condition (33) are that the deterioration in water quality is (or is likely to be), in whole or part, a result of the take and use of water authorised by this water permit, or by nutrient loss associated with the farming practices on the Property authorised by CRC203263 or any subsequent Farming Land Use Resource Consent, or as a result of the discharge of residual flow from the Dam, the consent holder shall:

a. Engage a SQEIP who is a freshwater scientist with experience in freshwater quality analysis to prepare a Remedial Action Plan ("RAP") in accordance with condition (35) and provide it to the Canterbury Regional Council by 30 October that year, or prior to any irrigation commencing on the Property for the season; whichever is sooner;

b. Take immediate action to reduce nutrient losses from the Property as identified in the RAP. These actions shall be recorded and provided to Canterbury Regional Council: Attention: Regional Lead - Compliance Delivery upon request; and

c. Implement any other measures required by the RAP within the timeframes specified in that document.

35. The RAP required by condition (34) shall set out:

a. The methods for altering and/or adapting farmland use practices to return water quality as soon as practicable to the levels of the relevant variables listed in condition (30)(b) at the relevant upstream monitoring site(s) identified in the annual audit undertaken in accordance with condition (32). Such methods shall include irrigation management practices and the

operation of the reservoir (including operation of the take for irrigation and residual flow discharge to Morton Stream from storage).

b. Timeframes for implementing the methods described in clause (a) of this condition, including immediate action to reduce nutrient losses from the Property.

Advice note: *The timeframes specified in conditions (33) and (34) are intended to ensure that immediate action is taken prior to and during the first irrigation season after any deterioration of water quality between the upstream and downstream monitoring sites referred to in condition (30) attributed to the exercise of this water permit is detected, and that the longer-term RAP measures are implemented prior to the second irrigation season after any deterioration in water quality or ecological health is detected.*

Reservoir Water Quality Monitoring

36.

a. Within one month of the Dam being commissioned, the consent holder shall commence monitoring of the quality of water samples:
   i. At the upstream sampling site on Grampian Stream under condition (30)(a);
   ii. In the reservoir;
   iii. In the residual flow discharged from the Dam; and
   iv. Taken from the reservoir for irrigation at the irrigation intake specified in condition (1) of this water permit.

b. The water quality monitoring undertaken in accordance with clause (a)(i) of this condition shall include 12 samples per year (but no more than 3 samples within a 30 day period) of Suspended Sediment, Total Nitrogen and Total Phosphorus during a range of inflows from Grampian Stream when the intake of the diversion is operating.

c. The water quality monitoring undertaken in accordance with clause (a)(ii) of this condition shall include:
   i. Continuous monitoring (on an hourly basis) of:
      A. The temperature of water in the reservoir within five metres of the water surface; and
      B. Dissolved oxygen concentrations and temperature within two metres of the bed of the reservoir using a sensor equipped with a wiper (or equivalent mechanism) to prevent fouling; and
   ii. Monthly monitoring of cyanobacteria cell counts in accordance with the New Zealand guidelines for cyanobacteria in recreational fish waters: Interim guidelines (2009) or any subsequent replacement.

d. The water quality monitoring undertaken in accordance with clause (a)(iii) and (iv) of this condition shall include monthly sampling of the following variables:
   i. Dissolved reactive phosphorous;
   ii. Total Nitrogen;
   iii. Total Phosphorous;
   iv. Nitrate-nitrite-nitrogen; and
   v. Ammoniacal nitrogen.

e. The water quality monitoring undertaken in accordance with clause (a)(iii) of this condition shall also include monthly sampling of chlorophyll *a.*

f. The monitoring required under this condition shall be undertaken in accordance with the requirements of condition (31) in relation to SQEIPs and Canterbury Regional Council approvals.

37. The consent holder shall provide a report ("Reservoir Water Quality Monitoring Report") prepared by a SQEIP who is a freshwater scientist with experience in reservoir water quality analysis to the Canterbury Regional Council, Attention: Regional Lead – Compliance Delivery, which shall set out the results of the monitoring undertaken in accordance with condition (36):

a. Within 60 days of the completion of six months of water quality monitoring; and

b. By 31 July each year.

38.

a. If, after six months of water quality monitoring required by condition (36):

i. The Trophic Level Index ("TLI") of the reservoir exceeds 4; or

ii. Total nitrogen, total phosphorus, algae biomass (chlorophyll *a*) or cyanobacteria exceeds any of the National Policy Statement for Freshwater Management 2020 (or any subsequent replacements);

then the consent holder shall commission a report prepared and peer reviewed by SQEIPs who are freshwater scientists with experience in reservoir water quality analysis, or reviewed by Canterbury Regional Council Scientist(s).

b. The report required under clause (a) of this condition must shall include:

i. The experts' conclusion on the cause of the exceedance(s);

ii. An assessment as to whether the exceedance measured by the monitoring is likely to continue;

iii. An analysis of the reservoir water quality monitoring data to determine whether water quality in the reservoir is degrading;

iv. The experts' recommendations on remedial actions to be implemented by the consent holder (including when such actions are to be implemented) that are reasonable and practical to improve the water quality in the reservoir to ensure:

A. the TLI does not exceed 4; and/or

B. no national bottom lines in the National Policy Statement for Freshwater 2020 (or subsequent replacement) are breached;

v. If appropriate, the experts' recommendations of changes to the reservoir water quality monitoring programme set out in condition 36 to monitor the efficacy of the remedial actions in clause (b)(iv) of this condition; and

c. Any remedial actions recommended in the report as required by clause (b)(iv) of this condition are to be implemented by the consent holder in accordance the timeframes specified in the report.

d. The report required under clause (a) of this condition must be completed and provided to the Canterbury Regional Council, Attention: Regional Lead - Compliance Delivery within 60 days of the monitoring report required by condition (37)(b) being submitted to the Canterbury Regional Council.

39.

a. If, after the first diversion of water from Grampian Stream to the Dam under resource consent CRC040989, the water quality monitoring required by condition (36)(b) indicates

the annual average total phosphorus inputs to the reservoir from Grampian Stream exceeds 40 kg per year, a report and remedial action plan shall:

i. Be prepared and peer reviewed by SQEIPs who are freshwater scientists with experience in reservoir water quality analysis, or reviewed by Canterbury Regional Council Scientist(s);

ii. Include the experts' recommendations as to remedial actions required to be implemented to reduce the amount of total phosphorus being discharged into the reservoir from Grampian Stream, including by (but not limited to) installation of sediment traps on the diversion from Grampian Stream to avoid sediment entering the reservoir; and

iii. Be completed and provided to the Canterbury Regional Council, Attention Regional Lead: Compliance Delivery, by 30 October following the sampling.

b. The remedial actions recommended in the report required by clause (a) of this condition are to be implemented by the consent holder in accordance with the timeframes specified in that report.

40.

a. If:

i. The water quality monitoring required by condition (36)(c)(ii) indicates that cyanobacteria biovolumes exceed Action: red mode (>1.8mm3/L equivalent of potentially toxic cyanobacteria or > 10mm3/L for total biovolume of all cyanobacteria) under the New Zealand Guidelines of Cyanobacteria in Recreational Fresh Waters 2009 or replacement guidelines for contact recreation; or

ii. Surface scums of cyanobacteria are observed;

then the measures set out in clause (b) must be implemented.

b.

i. The location of the off-take for the residual flow discharge to Morton Stream should be switched to the hypolimnion (between 1 and 3 metres of the bottom of the reservoir) as soon as practical; and

ii. A report and remedial action plan shall be prepared and peer reviewed by SQEIPs who are freshwater scientists with experience in reservoir water quality analysis, or reviewed by Canterbury Regional Council Scientist(s). The remedial action plan shall:

A. Include the experts' recommendations as to remedial actions to avoid cyanobacteria from entering downstream surface waterways, including (but not limited to) relocation of the residual flow discharge off-take to lower depths (hypolimnion); and

B. Be completed and provided to the Canterbury Regional Council, Attention: Regional Lead – Compliance Delivery, within 60 days of the levels set out in clause (a)(i) being met or the surface scums of cyanobacteria being observed.

c. The remedial actions recommended in the report required by clause (b)(ii)(A) of this condition are to be implemented by the consent holder in accordance with the timeframes specified in that report.

41.

a. If the water quality monitoring undertaken in accordance with condition (36)(c)(i)(B) indicates that:

i. Near-bed (1 to 2 metres above the bottom of the reservoir) dissolved oxygen concentrations have dropped below 5.0mg/L; and/or

ii. The daily average difference in water temperature between near surface (in the upper 5 metres) and near bed (1 to 2 metres above the bottom of the dam) exceeds 2 degrees for three days continuously;

then within 48 hours of such levels being reached, the consent holder shall implement the steps required under clause (b) of this condition.

b. The consent holder shall:

i. Notify the Canterbury Regional Council, Regional Lead - Compliance Delivery;

ii. Commence and continue operation of the artificial destratification system until dissolved oxygen concentrations rise to above the levels referred to in this condition; and

iii. Engage a SQEIP who is a freshwater scientist with experience in reservoir water quality analysis and the design, construction and testing of artificial destratification systems to prepare a report, to be peer reviewed by a SQEIP with the same qualifications and experience, or reviewed by Canterbury Regional Council Scientist(s), which includes:

A. A monitoring programme to measure and report on reservoir water quality during artificial destratification required by this condition; and

B. Recommendations on any modifications required to the design and operation of the artificial stratification for the purpose of improving and maintaining dissolved oxygen concentrations in the reservoir.

c. The report required by clause (b)(iii) of this condition shall be completed and provided to the Canterbury Regional Council, Attention: Regional Lead - Compliance Delivery within 60 days of the notification required by clause (b)(i) of this condition.

d. The monitoring programme recommended in the report required by clause (b)(iii)(A) of this condition shall be implemented by the consent holder for a period of 5 years commencing on the first diversion of water from Grampian Stream to the Dam under resource consent CRC040989.

Review of Monitoring Programme

42. On completion of the collection of a minimum of 5 years of monitoring data in accordance with conditions (30) and (36), the consent holder may submit a report ("Monitoring Recommendation Report") to Canterbury Regional Council, Regional Lead - Compliance Delivery; that:

a. Is prepared by a SQEIP who is a freshwater scientist with experience in reservoir water quality analysis;

b. Summarises the monitoring undertaken in accordance with conditions (30) and (36) of this water permit;

c. Considers whether the results of the monitoring data during the 5-year period demonstrates any deterioration of water quality arising from the exercise of this water permit; and

d. Based on the assessment undertaken in accordance with clause (c) of this condition, recommend any changes to the monitoring programme required by conditions (30) and (36), including whether monitoring may cease or be reduced in terms of the monitoring locations, monitoring variables and/or monitoring frequency.

43. Within 30 working days of receiving the Monitoring Recommendation Report, the Canterbury Regional Council shall certify that the Report has been prepared in accordance with, and meets the requirements of condition (42), provided that:

a. Should no response be provided to the consent holder within 40 working days of Canterbury Regional Council receiving the Monitoring Recommendation Report, then the consent holder may proceed on the basis that the Monitoring Recommendation Report is deemed

to be certified and monitoring may be adjusted according to the recommendations in the Report.

b. Canterbury Regional Council may, within 30 working days of receiving the Monitoring Recommendation Report, advise the consent holder in writing that the recommendations have been accepted, rejected or altered. Should the consent holder disagree with the Canterbury Regional Council response, then the consent holder shall consider the reasons for the response, update the Recommendation Report if appropriate and re-submit in accordance with this condition.

Review

44. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, or within a period of three months from receipt of any report referred to in the conditions of this water permit serve notice of its intention to review the conditions of this permit for the purpose of:

    a. Dealing with any adverse effect on water quality;

    b. Dealing with any adverse effect on target native fish and salmonid;

    c. Reviewing the appropriateness of monitoring regimes and monitoring frequencies in Schedule A;

    d. Dealing with any adverse effects on the environment which may arise from the exercise of this water permit and which it is appropriate to deal with at a later stage; or

    e. To require the consent holder to adopt the best practicable option to mitigate any adverse effect upon the environment.

Lapse date

45. The lapse date for the purposes of section 125 of the Resource Management Act shall be five years from the date of commencement of this water permit.

Appendix CRC145237 – Schedule 7 Farm Environment Plan

Definitions

In Schedule 7 the following definitions apply:

Management Area means the areas of farm management practice as set out below:
(a) Nutrients
(b) Irrigation
(c) Cultivation and soil structure
(d) Animal effluent and solid animal waste
(e) Waterbodies (riparian areas, drains, rivers, lakes, wetlands)
(f) Point sources – offal pits, farm rubbish pits, silage pits
(g) Water use (excluding water associated with irrigation) – stock water and wash-down water

Objective – means the overarching outcome sought in relation to each **Management Area.**

Target – means a measurable, auditable statement that contributes to achievement of the **Objective** in each **Management Area**.

Part A – Farm Environment Plans

A Farm Environment Plan can be based on either of:

1. The material set out in Part B below;

OR

2. Industry prepared Farm Environment Plan templates and guidance material that:
   (a) includes the following minimum components:
      (i) the matters set out in 1, 2, 3, 4B and 5 of Part B below;
      (ii) contains a methodology that will enable development of a plan that will identify actual and potential environmental effects and risks specific to the Property, addresses those effects and risks and has a high likelihood of appropriately avoiding, remedying or mitigating those effects;
      (iii) performance measures that are capable of being audited as set out in Part C below; and
      (iv) matters or requirements set out in Part B of Schedule 7 that have been added as a result of a sub-region planning process; and
   (b) has been approved as meeting the criteria in (a) and being acceptable to the Canterbury Regional Council by the Chief Executive of the Canterbury Regional Council.

Part B – Farm Environment Plan Default Content

The plan requirements will apply to:
(a) a plan prepared for an individual Property or farm enterprise; or
(b) a plan prepared for an individual Property which is part of a collective of properties, including an irrigation scheme, principal water supplier, or an Industry Certification Scheme.

The plan shall contain as a minimum:

1. Property or farm enterprise details
   (a) Physical address
   (b) Description of the ownership and name of a contact person
   (c) Legal description of the land and farm identifier
2. A map(s) or aerial photograph at a scale that clearly shows:
   (a) The boundaries of the Property or land areas comprising the farming enterprise.
   (b) The boundaries of the main land management units on the Property or within the farming enterprise.
   (c) The location of permanent or intermittent rivers, streams, lakes, drains, ponds or wetlands.

(d) The location of riparian vegetation and fences adjacent to water bodies.
(e) The location on all waterways where stock access or crossing occurs.
(f) The location of any areas within or adjoining the Property that are identified in a District Plan as “significant indigenous biodiversity”.
(g) The location of any critical source areas for phosphorus or sediment loss for any part of the Property including any land within the High Runoff Risk Phosphorus Zone.
(h) The location of flood protection or erosion control assets, including flood protection vegetation.
(i) Public access routes or access routes used to maintain the rivers, streams, or drains.

3. A list of all Canterbury Regional Council resource consents held for the Property or farming enterprise.

4A. An assessment of the adverse environmental effects and risks associated with the farming activities and how the identified effects and risks will be managed, including irrigation, application of nutrients, effluent application, stock exclusion from waterways, offal pits and farm rubbish pits.

4B (a) nutrient budgets which show the Lawful Exceedance Loss Rate and the Nitrogen Loss Calculation for the Property or farming enterprise; and
(b) a report from the Farm Portal which shows for any Property or farming enterprise the Good Management Practice Loss.

5. A description of how each of the following objectives and targets for each Management Area, where relevant, will be met and the specific actions that will be implemented to attain the targets.

5A **Management Area: Nutrients**

Objectives:
(1) Use nutrients efficiently and minimise nutrient losses to water.
(2) Nutrient losses do not exceed consented nitrogen loss limits.

Targets:
(1) Nitrogen losses from farming activities are at or below the:
  (a) Lawful Exceedance Loss Rate or the Good Management Practice Loss Rate (whichever is the lesser); or
  (b) consented nitrogen loss limits.
(2) Available nitrogen loss mitigation measures (excluding those associated with irrigation, fertiliser or effluent management) are implemented.
(3) Phosphorus and sediment losses from farming activities are minimised.
(4) Manage the amount, timing and application of fertiliser inputs to match the predicted plant requirements and minimise nutrient losses
(5) Store and load fertiliser to minimise the risk of spillage, leaching and loss into water bodies.

<u>Advice Note 1:</u>
The consented loss limits (as per condition 3 of CRC203263) are:

a. Prior to 1 July 2020;
  i. The Lawful Exceedance Loss Rate, which was 10 kg N/ha/yr, when calculated using Overseer version 6.3.2; unless
  ii. The nutrient discharge allowance as reduced in accordance with condition (14) below the Lawful Exceedance Loss Rate, for the purpose of achieving Water Quality Limits.
  iii. Each audit prepared under condition (6) and any report prepared under condition (13) shall be based on the current consented loss limit.

b. From 1 July 2020;
  i. the lesser of the Lawful Exceedance Loss Rate or the Good Management Practice Loss Rate; unless
  ii. The nutrient discharge allowance as reduced in accordance with condition (14) below the lesser of the Lawful Exceedance Loss Rate or Good Management Practice Loss Rate, for the purpose of achieving Water Quality Limits.
  iii. Each audit prepared under condition (6) and any report prepared under Condition (13) shall be based on the current consented loss limit.

For clarity, the relevant definitions are included at the end of the FEP Appendix.

Advice Note 2:
This Property is located within the Hakataramea Freshwater Management Unit – Hakataramea zone.

5B Management Area: Irrigation

Objective:
The amount and timing of irrigation is managed to meet plant demands, minimise risk of leaching and runoff and ensure efficient water use.

Targets:
(1) New irrigation systems are designed and installed in accordance with industry codes of practice and standards.
(2) The performance of irrigation systems is assessed annually and irrigation systems are maintained and operated to apply irrigation water at their optimal efficiency.
(3) The timing and depth of irrigation water applied takes account of crop requirements and is justified through soil moisture monitoring or soil water budgets and climatic information.
(4) Staff are trained in the operation, maintenance and use of irrigation systems.

5C Management Area: Cultivation and Soil Structure

Objective:
The physical and biological condition of soils is maintained or improved in order to minimise the movement of sediment, phosphorus and other contaminants to waterways.

Targets:
(1) Farming activities are managed so as to not exacerbate erosion.
(2) Farming practices are implemented that optimise infiltration of water into the soil profile and minimise run-off of water, sediment loss and erosion.

5D Management Area: Animal Effluent and Solid Animal Waste

Objective:
Animal effluent and solid animal waste is managed to minimise nutrient leaching and run-off.

Targets:
(1) Effluent systems meet industry Codes of Practice or an equivalent standard.
(2) The timing and rate of application of effluent and solid animal waste to land is managed so as to minimise the risk of contamination of groundwater or surface water bodies.
(3) Sufficient and suitable storage is available to enable animal effluent and wash-down water to be stored when soil conditions are unsuitable for application.
(4) Staff are trained in the operation, maintenance and use of effluent storage and application systems.

5E Management Area: Waterbodies (wetlands, riparian areas, drains, rivers, lakes)

Objective:
Wetlands, riparian areas and the margins of surface waterbodies are managed to avoid damage to the bed and margins of the water body, and to avoid the direct input of nutrients, sediment, and microbial pathogens.

Targets:
(1) Stock are excluded from waterbodies in accordance with regional council rules or any granted resource consent.
(2) Vegetated riparian margins of sufficient width are maintained to minimise nutrient, sediment and microbial pathogen losses to waterbodies.
(3) Farm tracks, gateways, water troughs, self-feeding areas, stock camps, wallows and other farming activities that are potential sources of sediment, nutrients and microbes are located so as to minimise the risks to surface water quality.
(4) Mahinga kai values are protected as a result of measures taken to protect and enhance water quality and stream health.

5F **Management Area: Point Sources (offal pits, farm rubbish pits, silage pits)**

Objective:
The number and location of pits are managed to minimise risks to health and water quality.

Target:
(1) All on-farm silage, offal pit and rubbish dumps are managed to avoid direct discharges of contaminants to groundwater or surface water.

5G **Management Area: Water-use (excluding irrigation water)**

Objective:
To use water efficiently ensuring that actual use of water is monitored and efficient.

Targets:
(1) Actual water use is efficient for the end use.

The plan shall include for each objective and target in section 5 above:
(a) detail commensurate with the scale of the environmental effects and risks;
(b) a description of the actions and Good Management Practices (and a timeframe within which those actions will be completed) that will be implemented to achieve the objectives and targets.
(c) a description of the good management practices together with the actions required.
(c) records required to be kept for measuring performance and attainment of the targets and objectives.

6. Nutrient budgets, prepared by a suitably qualified person using the Overseer nutrient budget model, or equivalent model approved by the Chief Executive of Environment Canterbury, for each of the identified land management units and the overall farm or farming enterprise.

Sub-region Additions

7. **Waitaki – Additional Requirements**

Within the Waitaki, Part A of Schedule 7 includes the following:

Note: A Farm Environment Plan developed under this schedule may also contain information about the management of any other environmental effect and can be used to assist in demonstrating compliance with other regulatory requirements in any other Regional Plan or the District Plan.

Within the Waitaki, Part B includes the following:

Management Area: Mahinga kai

Objective*:*
To protect mahinga kai values.

Target*:*
Mahinga kai values of surface waterbodies on the Property are recognised by achieving other objectives and targets in the Farm Environment Plan, and in addition by:
(a) maintaining existing indigenous vegetation in accordance with relevant regional council and district council vegetation clearance rules or any granted resource consent;

(b) identifying opportunities to undertake additional plantings of indigenous vegetation, and carrying out and managing any additional plantings in accordance with regional council guidelines for riparian planting;

(c) undertaking farming activities in a manner that minimises adverse effects on existing indigenous vegetation and on any additional plantings of indigenous riparian vegetation; and

(d) managing pest plants in accordance with regional council rules.

Management Area: In-stream Biodiversity Values

Objective:
To protect and enhance in-stream biodiversity values.

Targets:
(1) On the map or aerial photograph of waterbodies required under Part A of this Schedule, specify the location of any spring heads, wetlands and spring-fed streams on the Property or within the farming enterprise to recognise their high instream biodiversity values.
(2) Prioritise achievement of the targets for Management Area: Waterbody Management for any spring heads, wetlands and spring-fed streams so as to protect and enhance the instream biodiversity values.

Additions for CRC145237

8. **CRC145237 - Additional requirements**

The FEP shall include:

a. The following matters for the purpose of ensuring the farming activities on the Property will not lead to an increase in contaminant losses beyond those authorised by CRC203263 and will minimise contaminant losses from the Property:
    i. Farm system descriptors and base year inputs which describe the consented nitrogen loss limit for the farming land use consent for the Property in accordance with Environment Canterbury Nutrient Management - Guidelines for FEP Auditors, or any subsequent replacement document.
    ii. Mixed age breeding stock numbers required by condition (22) of CRC145237.
    iii. A process for determining when nutrient modelling will be required to be undertaken, how that modelling will be undertaken and the purpose of that modelling.
    iv. Matters required to comply with conditions of CRC145237 and how compliance will be achieved and demonstrated, including but not limited to:
        A. A procedure for determining when irrigation may occur and how much irrigation water can be applied within irrigation areas.
        B. A repairs and maintenance schedule for the irrigation system and related infrastructure.
        C. Fencing requirements.
        D. Setbacks of irrigation from waterways, including wetlands.
        E. Water quality monitoring and responses; and
        F. Irrigation design.

Advice notes:
(1) Nutrient modelling will be undertaken using Overseer, or any other method approved by the Canterbury Regional Council.
(2) The consent holder holds CRC203263 which includes consented nitrogen loss limits. The farm system descriptors which describe the consented nitrogen loss limits do not include irrigated land, but the addition of irrigated land is within the scope of the farming land use consent, provided that no increase in the predicted nitrogen loss occurs. It is the responsibility of the consent holder to ensure that any activity carried out on the Property, including irrigation, can be achieved within these limits and to be able to demonstrate how this is achieved if requested by the Canterbury Regional Council.

b. The following information informed by consultation with Te Rūnanga o Arowhenua (if any):
    i. A map or aerial photo that identifies:
        A. Areas of existing flora and fauna present within the Irrigation Command Area, Riparian Planting Areas and Wetlands A, B and C identified in Plans CRC145237A, B and C attached to and forming part of this water permit of significance to Māori;
        B. Water or landform features of significance to Māori; and
        C. Areas of riparian species within the Irrigation Command Area, Riparian Planting Areas and Wetlands A, B and C to be enhanced or restored;
    ii. Photographs showing the location and extent of key species within the areas referred to in clause (b)(i)(A) of this Appendix;

iii. A description of Mātauranga Māori as it applies to the Irrigation Command Area, Riparian Planting Areas and Wetlands A, B and C;
iv. On-farm practices to manage the potential effects of the take and use of water under this water permit on freshwater resources downstream of the Property.

Part C – Farm Environment Plan Audit Requirements

The Farm Environment Plan must be audited by a Certified Farm Environment Plan Auditor who is independent of the farm being audited (i.e. is not a professional adviser for the Property) and has not been involved in the preparation of the Farm Environment Plan.
The farming activity occurring on the Property will be audited against the following minimum criteria:
1. An assessment of the performance against the objectives, targets, and timeframes in the Farm Environment Plan;
2. An assessment of the robustness of the nutrient budget/s;
3. An assessment of the efficiency of water use (if irrigated)..

The auditor shall determine the level of confidence they have that each objective has been achieved. This level of confidence shall be categorised into the following:

1. High = The objective has probably been achieved;
2. Medium = The objective has possibly been achieved; or
3. Low = It is unlikely that the objective has been achieved.

The audit shall record the justification for each level of confidence assessment, including noting the evidence, or lack of, used to make the determination. Where an objective has received a Medium or Low level of confidence, the audit shall include the required actions for the farm to meet the objective. 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.

The audit shall record the overall audit grade based on the results of the level of confidence assessment as follows:

1. A grade = All Highs;
2. B grade = One or more Mediums and no Lows, but on-track to achieve the objectives;
3. C grade = One or more Mediums and no Lows, but not on-track to achieve the objectives; or
4. D grade = Any Lows.

The grade of the previous audit sets the timeframe until the next audit is required as follows:

1. A grade = 3 years;
2. B grade = 2 years;
3. C grade = 12 months; or
4. D grade = 6 months.

Exceptions to the timeframes for repeat audits apply in the following circumstances:

1. Where an audit grade of A or B has been achieved, but where the manager of the farm changes or the farm system changes, then an audit shall be under taken within 12 months of the change.

   A change in the farm system means whole farm operation conversions, including but not limited to, converting between dairy support, dairy platform, sheep & beef and cropping; and also any introduction of a new stock type to the farm, e.g. deer or wintering dairy cows. Changes such as, varying the type of crop grown or varying the relative proportions of stock types do not constitute a farm system change.

2. Where a farm is subject to Farm Environment Plan audit requirements under a nutrient discharge consent held by an irrigation scheme, the audit frequency specified in the irrigation scheme's consent shall prevail over the timeframes set out above.

3. Where a farm is subject to a Farm Environment Plan audit as part of an ISO Accredited audit programme, then the audit frequency for an A or B grade shall be consistent with that of the ISO accredited audit programme for a 'passed' audit under the programme.

The Environment Canterbury Certified Farm Environment Plan Auditor Manual sets out the standards and methods to be used by a Certified Farm Environment Plan Auditor to demonstrate proficiency and competency in the auditing of Farm Environment Plans.

DEFINITIONS

The Lawful Exceedance Loss Rate means the discharge of nitrogen below the root zone as modelled with the current version of OverseerFM as represented by the Lawful Exceedance Inputs provided with the application.

The Lawful Exceedance Loss Rate Overseer inputs reflect the farm system that was operated in the four years prior to 13 February 2016 and were inputted into the model in accordance with the Overseer Best Practice Data Input Standards. They can be updated to reflect the current Overseer Best Practice Data Input Standards, but must still describe the same activity.

The Farm Portal means a nutrient management database, which is found at: www.farmportal.ecan.govt.nz.

The Good Management Practice Loss Rate means the average nitrogen loss rate below the root zone, as estimated by the Farm Portal, for the farming activity carried out over the most recent four year period, if operated at Good Management Practice.

The Good Management Practice Loss Rate can be calculated by uploading the farm system inputs used in the OverseerFM modelling for the last four years through the Farm Portal. The inputs shall be updated to the current version of OverseerFM and updated to reflect the current Overseer Best Practice Data Input Standards, but must still describe the same activity.

Advice Note: The Overseer Best Practice Data Input Standards can be found within the OverseerFM User Guide.

Schedule A

The On-Going Monitoring referred to in Condition 28 of this consent shall include the following elements:

Land Baseline Study

Daily monitoring of:

a. air temperature
b. rainfall
c. wind speed and direction
d. evapo-transpiration (representative of catchment)
e. sunshine hours
    i. at one control site for at least one year.

Monthly monitoring of:

a. soil moisture
b. evapo-transpiration
c. leachate Quality (e.g. N, P)
    i. at four control sites located on land, which may include but which is not limited to, land which is the subject of this consent. One control site shall be a non-irrigated cropping block. One control site shall be on an existing irrigated cropping block. The remaining two controls sites shall be located on non-irrigated and irrigated grazing blocks.

Land use Inventory

A survey of agricultural and horticultural land use within the Hakataramea Valley and estimate the area of land used for:

a. Inventory of land use:

    (i) Cropping production,

    (ii) Livestock including sheep, beef, deer and dairying

    (iii) Mixed arable and livestock

Advisory Note: This inventory should include changes that occur seasonally on these lands. For example, cropping occurs only in certain parts of the year, and dairying practices can also change seasonally, depending on the farmer.

a. Inventory of land use practices:

    (i) Cropping Methods i.e. harvesting, planting, and fallow times in between.

    (ii) Stock grazing/breeding programs

    (iii) Audit of fertiliser use (nutrient budgets - Overseer/Spasmo)

    (iv) Animal waste management

    (v) Percentage of streams fenced and area of margins between fence and stream bank

(vi) Survey of current stock access to stream beds and banks, including outine stock crossing i.e. dairy cows making way to cow shed.

A desktop investigation on catchment wide land classification, specifically:

a. Geology
b. Land class (e.g. LUC)
c. Topography (e.g. steep/shallow)
d. Non-agricultural/horticultural land use and estimated areas of these (e.g. forestry, reserve land etc.).

Advisory Note: The purpose of this desktop investigation is to provide a summary of those catchment features which may affect the water quality of the Hakataramea River or its tributaries. The catchment feature could either be impacted by land use practices (for example intensive grazing on highly erodible soils) or the catchment feature itself could contribute an effect on the waterway when the land use practice is employed (such as increased runoff when irrigating on steep slopes).

Diversion Point

Dam Inundation Area

Location of Dam and Point of Take

Wetland A

Wetland B

Wetland C

Data Disclaimer:

Locations approximate only

Legend

- Outline of land parcels forming the property
- Irrigation Command Area
- Dam inundation area
- Diversion Point
- Location of Dam and Point of Take
- Wetland
- Matagouri

Paper Size ISO A3

0 400 800 1,200 1,600

Meters

N

Map Projection: Transverse Mercator
Horizontal Datum: NZGD 2000
Grid: NZGD 2000 New Zealand Transverse Mercator

GHD

NSK Farming Limited
NSK Farming Evidence

Project No. 12598240
Revision No. A
Date 4/09/2023

CRC145237A Site Overview

FIGURE 1

G:\51\12598240\GIS\Maps\Deliverables\NSK_overview.mxd
Print date: 03 Oct 2023 - 16:44

Data source: Environment Canterbury Regional Council; Hurunui District Council; Waimakariri District Council; Timaru District Council; Waimate District Council; Mackenzie District Council; Otago Regional Council; LINZ; NIWA, LINZ, Environment Canterbury, Environment Canterbury. Additional data supplied by Client. Created by: smcrae2

Morton Stream

Pivot 1 (68 Ha)

Pivot 1a (4.3 Ha)

Dam Inundation Area

Pivot 2 (44 Ha)

Pivot 3 (83 Ha)

Pivot 4 (71 Ha)

Grampian Stream

Gormans Road

Data Disclaimer:

Locations approximate only

Legend

- Land Parcels
- Irrigation Command Area
- Indicative (alternative) pivot irrigator locations
- Riparian Planting Area
- Dam Inundation Area
- Matagouri
- Proposed Pipeline

Paper Size ISO A3

0 200 400 600 800

Meters

N

Map Projection: Transverse Mercator
Horizontal Datum: NZGD 2000
Grid: NZGD 2000 New Zealand Transverse Mercator

GHD

NSK Farming Limited
NSK Farming Evidence

CRC145237B - Dam Block

Project No. 12598240
Revision No. A
Date 25/08/2023

FIGURE 2

N:\NZ\Auckland\General\Environment & Planning\Christchurch\Temp\NSK_B1.mxd
Print date: 28 Aug 2023 - 11:30

Data source: Environment Canterbury Regional Council; Hurunui District Council; Waimakariri District Council; Timaru District Council; Waimate District Council; Mackenzie District Council; Otago Regional Council; LINZ; NIWA, LINZ, Environment Canterbury, Environment Canterbury. Additional data supplied by Client. Created by: smcrae2

Pivot 1 (12 Ha)
Pivot 1a (13 Ha)
Pivot 2 (23 Ha)
Pivot 1b (30 Ha)
Wetland A
Linear Pivot (24 Ha)
Wetland B
Pivot 4 (121 Ha)
Gorman Stream
Pivot 7 (50 Ha)
Wetland C
Pivot 8 (50 Ha)
Pivot 5 (32 Ha)
Pivot 10 (20 Ha)
Hakataramea Pass Road
Moorland Settlement Road
Gormans Road
Two Mile Stream
Wyatt Stream
Peter Stream

Data Disclaimer:

Locations approximate only

Legend

- Land Parcels
- Irrigation Command Area
- Indicative (alternative) pivot and linear irrigator locations
- Wetland
- Wetland 100 m buffer
- Riparian Planting Area
- Powerline
- Proposed Pipeline

Paper Size ISO A3

0 200 400 600 800

Meters

Map Projection: Transverse Mercator
Horizontal Datum: NZGD 2000
Grid: NZGD 2000 New Zealand Transverse Mercator

N

GHD

NSK Farming Limited
NSK Farming Evidence

Project No. 12598240
Revision No. A
Date 25/08/2023

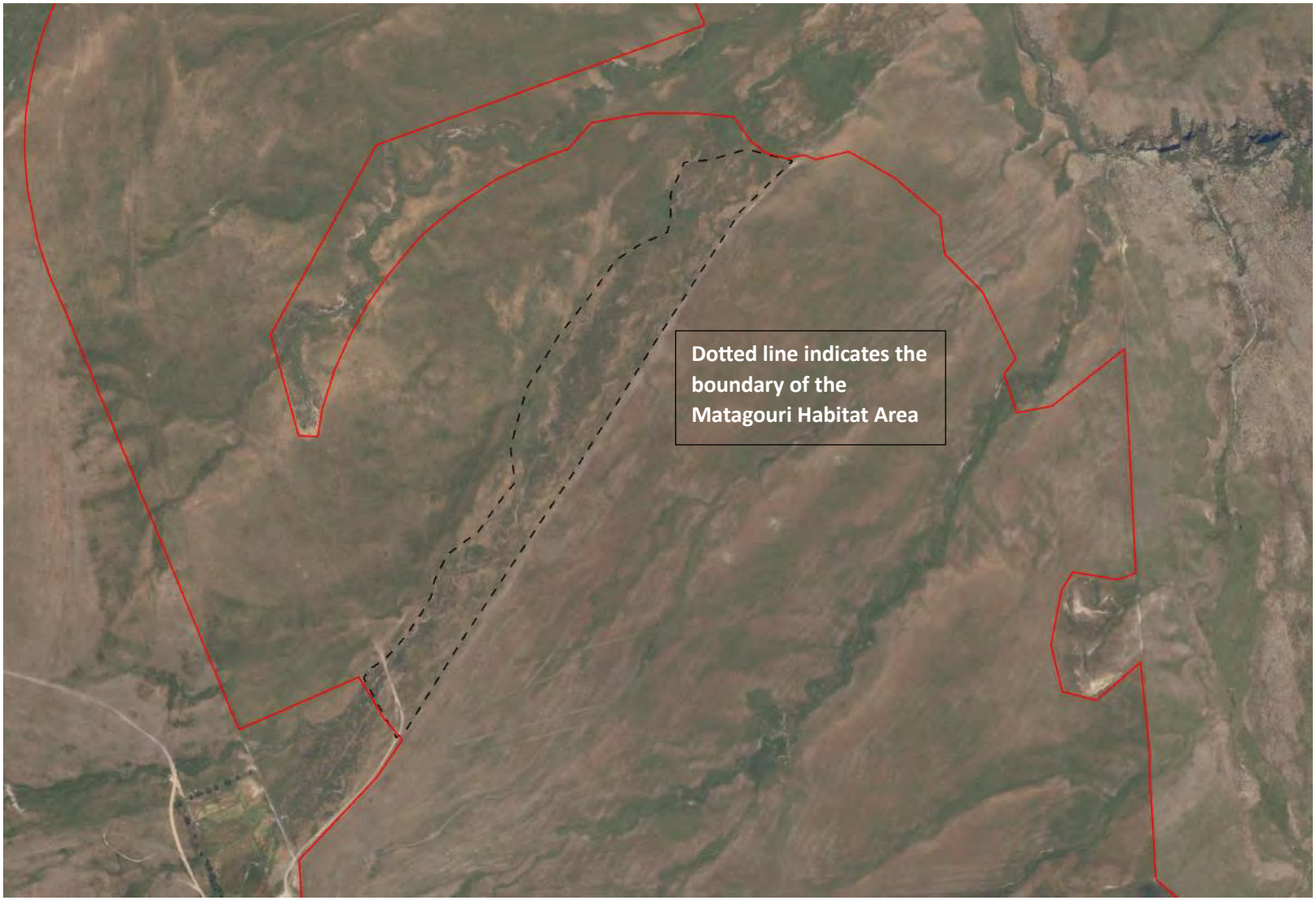
CRC145237C - Home Block

FIGURE 1

N:\NZ\Auckland\General\Environment & Planning\Christchurch\Temp\NSK_B2.mxd
Print date: 28 Aug 2023 - 10:58

Data source: Environment Canterbury Regional Council; Hurunui District Council; Waimakariri District Council; Timaru District Council; Waimate District Council; Mackenzie District Council; Otago Regional Council; LINZ; NIWA, LINZ, Environment Canterbury, Environment Canterbury. Additional data supplied by Client. Created by: smcrae2

PLAN CRC145237D: Matagouri Habitat Area



PLAN CRC145237E: Localised water quality and ecological health monitoring sites