Maerewhenua District Water Resource Company Ltd

Scheme Management Plan

Version 2
Revised November 2024 & Approved April 2025

Version Control

Revision Chronology						
Revision No.	**Revision Status**	**Reason**	**Date**	**Preparer**	**Approved**	**Review**
1.0			May 2017		Board	
1.2			October 2020		Board	
1.3			February 2021		Board	
2	Approved	Updated resource consent, Management	November 2024	Aqus	Board approved 29 April 2025	As applicable

Contents

1. INTRODUCTION

1.1. Purpose

The purpose of this document is to outline the responsibilities, practices, and procedures that the Maerewhenua District Water Resource Company (referred to in this document as MDWRC) have in place to operate the take and delivery of water and to monitor and manage the environmental effects of the use of the water from the scheme. This scheme Management Plan (SMP) has been developed in accordance with the conditions of Environment Canterbury (ECan) resource consents CRC180534; CRC233091, CRC203646; and Otago Regional Council (ORC) resource consent RM13.046.01.V1.

1.2. Scheme Description

The MDWRC is a small community irrigation scheme with a command area around the Duntroon and Maerewhenua areas on the south bank of the Waitaki River.

The scheme was originally built in the 1970s as a gravity-fed border-dyke irrigation system and was sold by the Crown to the company in the 1980s. The original scheme design was for water to be used from the Duntroon Springs and the Maerewhenua River, however the Waitaki River provides a much higher level of reliability.

In early 2011, the scheme's intake structure and headrace were completely destroyed during a period of sustained high river flows (around 1100 cumecs for three months). The scheme therefore invested significantly in having the intake structure moved and rebuilt and the headrace replaced with a piped reticulation system. A spray extension was also undertaken to increase the area under irrigation whilst improving environmental flows into the Maerewhenua River.

The scheme supplies water for a variety of property types, needs, and uses including sheep, beef and dairy operations.

MDWRC is administered by a board of directors and has contracted Aqus Limited (Aqus) to be scheme managers with responsibility for administration and commercial services, environmental compliance and operational oversight. Daily operation and maintenance is contracted to Waitaki Irrigation Management Limited.

Shareholders have signed a Water Supply Agreement (WSA) with MDWRC that contains binding obligations of share ownership.

1.3. Resource Consents Held

The scheme holds three take and use consents granted by ECan summarised as follows:

	Consent No.	Point of Take	Use	Rate of Take	Annual Volume	Expiry Date
1.	CRC180534	Surface Water Abstraction Point (SWAP) – I4/0562 Map Reference - NZTM CB17:1558-3180	Border dyke Irrigation	900 L/s	N/A	02.03.30
2.	CRC233091		- Spray Irrigation - Stock water - Shed water	664 L/s	- 7,387,166 m^3 - 222,756 m^3 - 204,288 m^3	07.05.33
3.	CRC203646		Irrigation, stock water and shed water	81 L/s	- 1,023,000 m^3	07.05.33

1. ECan consent CRC180534 covers the border dyke irrigation under the scheme. This consent authorises the scheme to take water from the Waitaki River via a diversion race from SWAP I40/0562 at a rate not exceeding 900 L/s and a volume not exceeding 77,760 cubic metres per day.
2. ECan consent CRC233091 covers the spray irrigation extension that was commissioned in 2013. This consent authorises the scheme to take 664 L/s from the Waitaki River at SWAP I40/0562, which is then pumped via a piped system to shareholders. The water is delivered into two tanks on each shareholder's property and shareholders then pump the water from the tanks at their own cost. .
3. ECan consent CRC203646 covers a further irrigation take, consented in 2020. This consent authorises the scheme to take water from the Waitaki River via SWAP I40/0562 at a rate not exceeding 81L/s.

The permitted volume in any three consecutive day period is 77,760 cubic metres, with an annual volume of 1,023,000 cubic metres.

The scheme holds one use consent granted by ORC as follows:

	Water Permit No.	Point of Use Map Reference	Use	Monthly Volume	Annual Volume	Expiry Date
4.	RM13.046.01.V1	NZTM 2000 E1419098 N5024154	- Spray Irrigation - Stock water - Shed water	201,000m^3	1,294,600m^3	09.12.46

4. ORC consent RM13.046.01.V1 relates specifically to one shareholder whose take is part of CRC181891 but whose property, and therefore 'use', falls within ORC territory. This consent authorises the scheme to use water from the Waitaki River for the purpose of irrigation, stock drinking water and dairy shed wash water.

The scheme holds five discharge consents granted by ECan summarised as follows:

	Consent No.	Discharge Point Map Reference	Description	Maximum Rate of Discharge	Expiry Date
5.	CRC952216	I40:260-933	To discharge surplus irrigation water into the Waitaki River	1500 L/s	02.03.30
6.	CRC952217	I40:276-920	To discharge surplus irrigation water into the Maerewhenua River	900 L/s	02.03.30
7.	CRC952218	J40:313-913	To discharge surplus irrigation water into the Waitaki River	450 L/s	07.05.33
8.	CRC952219	J41:354-897	To discharge surplus irrigation water into the Lower Waitaki Irrigation scheme holding pond via a natural creek	900 L/s	02.03.30
9.	CRC952220	J41:365-892	To discharge surplus irrigation water into Black Point Creek	500 L/s	02.03.30

The scheme holds the following other consents through ECan summarised as follows:

	Consent No.	Map Reference	Description	Expiry Date
10.	CRC180533	I40:257-935	To divert water from the Waitaki River into a diversion race at a rate not exceeding 1,500 L/s (relates to border dyke consent only)	02.03.30
11.	CRC082187	Various	To reconstruct and maintain a weir and to disturb the bed to facilitate the diversion of water	02.03.30
12.	CRC952209	I40:234-945 to I40:257-935	To disturb the bed of the Waitaki River for the purpose of facilitating the diversion of water	02.03.30
13.	CRC120248	NZTM CB17:1560-3179	To construct and maintain an irrigation intake structure	02.03.30

The scheme holds an Easement Concession with Department of Conservation to have water pipes through a small reserve east of Duntroon

	Permission No.	Title Reference	Description	Expiry Date
14.	36975-OTH	Sect 32 BLK III Maerewhenua SD	Water pipes through Duntroon Quarry	30.09.2062

There are agreements with LINZ for pipeline/ siphon under the Maerewhenua River and railway reserve alongside SH1. *No details to hand.*

1.4. Water Allocation per Shareholder

Water is allocated on a per share basis as per amended clause 3.2(a)(vii) and 3.4(a) of the Company Constitution:

"Each share shall entitle the holder to take sufficient water to irrigate one hectare, whether border dyke or spray, at the company's current application rates, provided however that a holder may (with the company's consent in its absolute discretion) be entitled to irrigate more than one hectare on his or her land at a lower application rate. By way of an example, a farmer with 100 shares is entitled to irrigate 100 hectares at 0.5l/sec, or if they choose 120 hectares at 0.4l/sec."

The scheme has determined that there is a maximum water application rate (in litres per second) for a border dyke and spray user to irrigate one hectare of land inside the command area. These maximum application rates are 500L/s for border dyke and 0.5L/s for spray.

The annual volume of water allocated to each shareholder is stated on their farm environment plan (FEP), taking into account the number of shares that each shareholder owns. The annual allocation per share is derived from the scheme's annual volume attached to the consent(s), taking into account "reasonable use" requirements (as set out in the Waitaki Catchment Water Allocation Regional Plan, and requires shareholders to manage their use through the season, especially in drier seasons.

2. ROLES AND RESPONSIBILITIES

MDWRC represents its irrigating shareholders and is governed by a board of directors whose responsibilities include:

- Taking all reasonable steps to maintain the resource consent to take and use water
- a conscientious commitment to achieving to the objectives and targets set out in this SMP
- encouraging all shareholders to follow, at a minimum, the industry-agreed good management practices (GMP) relating to water quality that have applied to Canterbury farms since 2017
- ensuring strong environmental outcomes

The operational management (also known as operations manager(s))of the scheme is contracted out to Waitaki Irrigation Management Limited (WIML). WIML responsibilities include:

- Assuming overall responsibility for the day to day operation of the irrigation scheme including the pumped extension
- Carrying out all required maintenance of off-farm scheme infrastructure
- Maintaining regular liaison with irrigators to ensure compliance with the conditions of supply
- Monitoring the effectiveness of the scheme
- The distribution and management of irrigation water

Aqus has been appointed as scheme managers (for a term until 31 May 2025). Aqus is responsible for implementing the environmental management requirements set out in this plan as well as maintaining compliance with the resource consents held by the scheme. The responsibilities are outlined in the Management Contract and include:

- Managing the delivery of the MDWRC environmental management system and its responsibilities under the SMP and any current resource consents held by the company
- Ensuring compliance with all consents including reporting as required
- Managing any complaints and compliance breaches, whether occurring on farm or by the company
- Managing the FEP programme, annual audits and any actions arising from those audits
- Undertaking the company's water quality programme

3. APPROACH TO SUSTAINABILITY

MDWRC recognises that water is a critical component of any farming operation and that it provides security of production in times of water shortage. Ensuring security of water is essential for sustainable businesses and economically stable surrounding communities.

In order to maintain surety of supply, MDWRC shareholders have certain obligations which include continual improvement in irrigation efficiencies and high standards of environmental performance.

4. FARM ENVIRONMENTAL PLAN OBJECTIVES AND TARGETS

MDWRC uses an ECan compliant FEP template specific to the scheme and the consents that it holds.

The template (supplied to shareholders) includes the following objectives and targets that are listed in Schedule 7 of the Canterbury Land and Water Regional Plan, as per consent CRC233091 Appendix CRC233091A:

Management Area	Objective	Target
Nutrients	a) Use nutrients efficiently and minimise nutrient losses to water. b) Nutrient losses do not exceed consented nitrogen loss limits.	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.
Irrigation	a) The amount and timing of irrigation is managed to meet plant demands, minimise risk of leaching and runoff and ensure technically efficient water use.	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, is justified through soil moisture monitoring or soil water budgets and climatic information and ensures field capacity is not exceeded. 4. Staff are trained in the operation, maintenance and use of irrigation systems.
Cultivation and Soil Structure	a) 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.	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.
Animal Effluent and Solid Animal Waste	a) Animal effluent and solid animal waste is managed to minimise nutrient leaching and run-off.	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 us 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.
Waterbodies (wetlands, riparian areas, drains, rivers and lakes)	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.	1. Stock are excluded from waterbodies in accordance with regional council rules or any granted resource consent. a. Within the irrigated area, In respect of any natural, permanently flowing, surface water feature permanent fencing shall be erected in general accordance with the Canterbury Regional Council's "Guide to managing waterways on Canterbury farms" & companion guide "Lowland Plains, Streams and Drains." b. Where practicable, riparian planting shall be carried out within fenced areas. c. Temporary fencing will be erected when stock are grazing areas of the property where there is access to other waterways. d. all fencing will be maintained in a good state of repair. 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 and other farming activities that are potential sources of sediment, nutrient and microbial loss 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.
Point Sources (Offal Pits, farm rubbish pits, silage pits)	The number and location(s) of pits are managed to minimise risks to health and water quality	1. All on-farm silage, offal pit and rubbish dump discharges are managed to avoid direct discharges of contaminants to groundwater or surface water.
Water Use (excluding irrigation water)	To use water efficiently ensuring that actual use of water is monitored and efficient.	1. Actual water use is efficient and appropriate for the end use.
Mahinga Kai and Instream Biodiversity	a) To minimise adverse effects on mahinga kai, wahi tapu and wahi taonga values.	1. Mahinga kai, wahi tapu and wahi taonga sites, along with indigenous biodiversity and ecosystem values on

	b) To safeguard significant indigenous biodiversity and ecosystem values within the scheme area, including taonga species identified by Te Runanga O Moeraki.	the property are recognised by achieving other objectives and targets in the Farm Environment Plan, and in addition by: a. Identifying any mahinga kai, wahi tapu and wahi taonga sites, indigenous biodiversity or other areas of significance on the property; and b. Maintaining existing indigenous vegetation in accordance with relevant regional council and district council vegetation clearance rules or any granted resource consent; and c. 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; and d. Undertaking farming activities in a manner that minimises adverse effects on existing indigenous vegetation and on any additional plantings of indigenous riparian vegetation; and e. Managing pest plants in accordance with regional council rules 2. On the Map or aerial photograph of waterbodies required, specify the location (on a map) of any springs, wetlands and/or spring fed streams on the property to recognise their high instream biodiversity values. 3. Prioritise fencing and stock exclusion targets for spring heads, wetlands, and spring fed streams.
Tuhituhi Nehera (rock art sites) and Wahi Taonga	a) To protect tuhituhi nehera sites and the historic, ecological and Ngai Tahu values associated with these sites and their surroundings. All land within the MDWRC command area that contains Māori Rock Art must be identified. b) To protect any other wahi taonga sites (areas, places or sites that are significant to Māori). All land within the MDWRC command area that contains wahi taonga must be identified. c) The sites are to be mapped on the FEP map with GPS co-ordinates included, and all relevant archaeological survey reports are to be attached to the FEP. Any recommended mitigation measures	1. Locate any Māori rock art or wahi taonga sites on an aerial photo/farm map. 2. Minimise hydrological impacts of new irrigation development on identified Māori rock art or wahi taonga sites. 3. Undertake all farm activities in a manner that ensures the protection of Māori rock art or wahi taonga sites.

	must be incorporated into the FEP also.	
Ongoing Updates	a) To provide information to the consent holder including land use, area irrigated, stock numbers and fertiliser use. b) Ensure the FEP is prepared, implemented and regularly reviewed.	1. Ensure Overseer reporting is completed annually and provided to MDWRC by 31st of August of each year (or as requested). 2. New shareholders will supply a copy of their Schedule 7 compliant FEP to MDWRC before water is supplied. 3. All shareholders will supply an updated copy of their Schedule 7 compliant FEP to MDWRC to reflect any significant management or infrastructure changes on their property, before a scheduled audit, or at any other time as requested by MDWRC. 4. All shareholders will be audited on a regular basis, in line with the ECan auditing schedule (based on audit grade received).

Schedule 7 farm management plan content is provided in consent CRC233091 Appendix CRC200391B, for applicable properties.

5. SCHEME OBJECTIVES, POLICIES AND METHODS

The scheme's primary objective is to ensure that it is compliant with its resource consents.

In order to achieve this, MDWRC has identified several key objectives and have outlined below the policies and methods that will be used to implement these objectives.

5.1. Continuous Improvement

Objective

- Encourage continuous improvement of on-farm practices through on-going education and support.

Policies and Methods

- Collate and provide best farm practice information to shareholders.
- Provide workshops around similar environmental management practices as and when required.

5.2. Irrigation Efficiency

Objectives

- For shareholders to achieve technically efficient use of water, whilst minimising runoff and drainage.
- Irrigation is managed on-farm in such a way to ensure compliance with the scheme's consents.

Policies and Methods

- Ensure any new irrigation infrastructure takes into account the shareholders property's soil types, is designed and accredited by a qualified professional and is installed in accordance with the accredited design; require proof of this be provided to the scheme by the shareholder on request.
- Ensure an up-to-date scheme property list is maintained which identifies the irrigation infrastructure employed on each farm, the area covered by each irrigation type and the date/s that evaluation has most recently taken place.
- Shareholder allocation is determined by the consented scheme annual volume allocation in the applicable consents divided across the shares held under that consent. Monitor monthly usage of spray consent shareholders, which is 6400m3 based on Irricalc demand modelling for scheme soils & climate. Shareholder Volume allocation is not currently applied to border dyke shareholders. Best practice volumes of 10,000m3/ha are monitored annually
- To help shareholders manage their annual allocation they are provided with their monthly water usage throughout the irrigation season
- Review FEP audit report results to ensure GMP around irrigation application and maintenance are being followed by shareholders (including regular bucket tests).

5.3. Farm Environment Plan

Objectives

- All shareholder and associated properties irrigating greater than 10ha must have a current FEP which is compliant with the Canterbury Land and Water Regional Plan and any scheme specific targets/objectives *(see information in section 4 above)*
- Continuous improvement of on-farm practice is encouraged through updating the FEP when any significant management changes occur on farm and/or before a scheduled audit.
- Where there is a change in farm system or management/ownership, associated properties are to have their FEP audited within 12 months of this change occurring.

Policies and Methods

- MDWRC has an ECan approved scheme specific FEP template to be used for all shareholders where MDWRC is nominated as the Primary Organisation. shareholders using a template other than the approved MDWRC FEP template must ensure that:
    a. the template has been approved by ECan; and
    b. any additional information required under the MDWRC consent is included in the template *(this information will be available on request)*.

- Ensure shareholder update their FEPs prior to audits, and at any other time as requested by the scheme.
- Properties irrigating less than 10ha are subject to a Ecan compliant Farm Management Plan in accordance with Ecan LWRP rules or relevant consent

5.4. Farm Environment Plan Audits

Objectives

- FEP audits are an integral part of the cycle of continuous improvement and are a feedback tool to support shareholder education.
- FEP audits are a means for the scheme to ensure shareholders are fulfilling their requirements under resource consents CRC233091, CRC203646 & RM13.046.01 V1 to use water effectively, avoid application of water to non-productive land, and meet other criteria set out in the FEP.
- FEP audits are completed to comply with conditions and timeframes set out in consents CRC233091, CRC203646 and RM13.046.01.V1.
- FEP audits are completed in accordance with the most recent version of the *Canterbury Certified Farm Environment Plan Auditor Manual*

Policies and Methods

- FEP auditors are to act in a manner which is consistent with the environmental goals and objectives of MDWRC.
- FEP auditors are trained and knowledgeable in resources and information to assist shareholders with continuous improvement of their farming practices.
- Audits will only be completed by certified and suitably qualified individuals meeting the criteria for a FEP Auditor under the LWRP.
- FEP auditors will ensure objectives in FEP are met and assign actions/grades as appropriate to address inaction on the shareholder's part.
- FEP auditors will lodge the final audit report with ECan and provide a copy to the shareholder and the scheme; the scheme will note the grade and associated re-audit timeframe.
- Where a farm land use (FLU) consent applies to a property receiving water under MDWRC consents, the FLU audit conditions take precedence (according to the guidance in the ECan auditors' manual), while still requiring MDWRC consent conditions to be referenced, where applicable.

5.5. Instances of more than one Irrigation Water Source

Objective

- Where shareholders have additional irrigation water sources for their property such as another scheme or independent consent, it is important that there is clear communication and understanding around the roles and responsibilities regarding environmental processes.

Policies and Methods

- A shareholder may choose to nominate a primary organisation, other than MDWRC, to co-ordinate their FEP and audit track. If water is supplied under any other consent (independent or another scheme), or a FLU is held, a single FEP covering the entire property and reflecting those conditions is required.
- In order for the primary organisation to ensure that the shareholder meets his/her obligations under the MDWRC SMP, a schedule of MDWRC's FEP objectives and targets is to be provided to the primary organisation by the shareholder.
- Shareholders are to confirm the primary organisation managing the environmental requirements for their property and must provide permission for all relevant information to be shared between the organisations. A copy of the FEP and audit is to be supplied to MDWRC to retain on file. If the FEP and audit is undertaken via the MDWRC track, a copy shall be shared to any other relevant water supplier on request.
- Shareholders are to advise MDWRC if they are no longer a shareholder with the primary organisation or if they wish to change their primary organisation.
- Shareholders must demonstrate that MDWRC water is not applied concurrently with water authorised by any other consent.

5.6. Overseer Nutrient Budgets

Objective

- Nutrient budgets are consistent, robust, reproducible and completed in a timely manner.
- These are produced annually as per consent conditions for those supplied by spray consent CRC233091

Policies and Methods

- Nutrient budgets are prepared or reviewed by a Certified Nutrient Management Advisor (CNMA).
- The scheme has set clear guidelines around the dates by which nutrient budgets are required from shareholders *(refer Schedule 5: Reporting Deadlines)*.
- Shareholders are responsible for contacting the providers of the nutrient budgets to ensure that they are provided to the scheme in line with Schedule 5, contain the required information, and meet the following conditions:
    - All nutrient budgets are to be supplied in the most recent version of OVERSEER©
    - All nutrient budgets are completed in accordance with the most recent OVERSEER© Best Practice Data Input Standards
    - Any errors found in the nutrient budget are to be corrected by the individual who completed the original budget and re-submitted
    - Deviation from input standards are recorded, with reasons and the original input information provided
    - All records relating to OVERSEER© nutrient budgets are kept and made available upon request
- For those shareholders who are supplied by the spray consent (CRC233091), annual OVERSEER© subscriptions need to be kept up to date to allow for access to nutrient data at any time.
- Shareholders must ensure that Irricon Resource Solutions has been granted permission to access OVERSEER© to allow nutrient budget information to be collated for the annual scheme Nutrient Budget Report.
- A copy of the Nutrient Budget report is to be supplied to MDWRC.
- Aqus is responsible for ensuring that shareholders have provided the information to Irricon in a timely manner to allow for the required scheme nutrient budget reports to be compiled and provided to ECan by 30 September of each year (*refer Schedule 5*).

5.7. Property Sales and Leases

Objectives

- Shareholder property sale transactions and transfer of leases to continue, while still ensuring continuity of data provided to MDWRC to meet environmental reporting requirements.
- New owners or lessees of scheme-irrigated properties are familiar with the nutrient management requirements under the shareholder's Water Supply Agreement.

Policies and Methods

- MDWRC recommend that all sale and purchase and lease agreements should include standard clauses relating to:
    - The provision of data and information to future owners, lessees or licensees of a shareholder property (including but not limited to all current and previous FEPs, audit reports, OVERSEER© nutrient budget(s)); and
    - In the case of a Sale and Purchase agreement (where shares are also being sold), that the parties will seek approval for the share transfer from MDWRC In accordance with the Company constitution and any share transfer process that has been set by MDWRC; and
    - In the case of a lease or license, requiring the lessee or licensee (as might apply) to comply with all requirements that might exist or might be required by the shareholder and MDWRC.
- The shareholder will at all times be responsible for all matters relating to the supply of water and provision of data and information to MDWRC (regardless of any license or lease arrangement).
- Share transfers will not be approved by the MDWRC Board until MDWRC has confirmation the FEP, audit reports, OVERSEER nutrient budget(s), and any other relevant information is updated and provided to the new owner.

- All information relating to the property's historical OVERSEER nutrient budgets, FEPs and FEP Audits should be freely available to any new owner or lessee.
- Shareholders are to advise MDWRC of the contact details of any new lessee of their property prior to the lessee taking over management of the property.
- New owners and lessees of existing scheme-irrigated properties may choose to contact Irricon Resource Solutions to discuss their nutrient management requirements.
- In accordance with clause 17(f) of resource consent CRC233091, ECan is to be notified by MDWRC about a change of party to a Water Supply Agreement.
- Aqus is to be notified of any change in property ownership, management or leaseholder.

5.8. Stock Exclusion – Natural and Artificial Waterways

Objectives

- To minimise any adverse effects from sedimentation or faecal contamination of groundwater and surface water, by excluding stock from natural waterways; and comply with relevant consent conditions
- Enable an efficient flow of water within the irrigation race, reduced maintenance costs and a tidy appearance by allowing stock to graze the irrigation race (under certain conditions and with express permission) when dry.

Policies and Methods

- At no time are any stock allowed to graze in a river, wide river or natural wetland. Setbacks are as per the national Stock Exclusion Regulations or any regional plan rules. It is noted that consent requirements apply as well as national rules.
- Stock-proof permanent or temporary fencing is required to prevent stock from entering the irrigation race. This fencing is to be set back 1 metre from the edge of the irrigation race to ensure that there is no damage to the edge of the race banks. This requirement will be monitored by the scheme Operations Manager.
- In certain circumstances and at the discretion of the Operations Manager, the area within the irrigation race (being an artificial watercourse), may be break fenced and grazed for a limited period of time over the winter months when the irrigation race is dry. Express written permission will need to be obtained from the Operations Manager each season, detailing specific dates and conditions by which a shareholder may graze the irrigation race.

5.9. Waste Material in the Race

Objectives

- To eliminate the amount of on-farm debris, such as silage cover, baleage wrap, drums etc. from entering the water race and causing potentially costly issues with siphon grills, slip-gates and pump impellors.
- To eliminate the associated health and safety risk to scheme operation staff and/or on-farm staff caused by having to enter the race and remove the debris.

Policies & Methods

- Shareholders and/or farm staff are to ensure that waste material is disposed of correctly.
- Shareholders and/or farm staff are to ensure that any loose waste material found on the property is picked up immediately or as soon as practically possible.

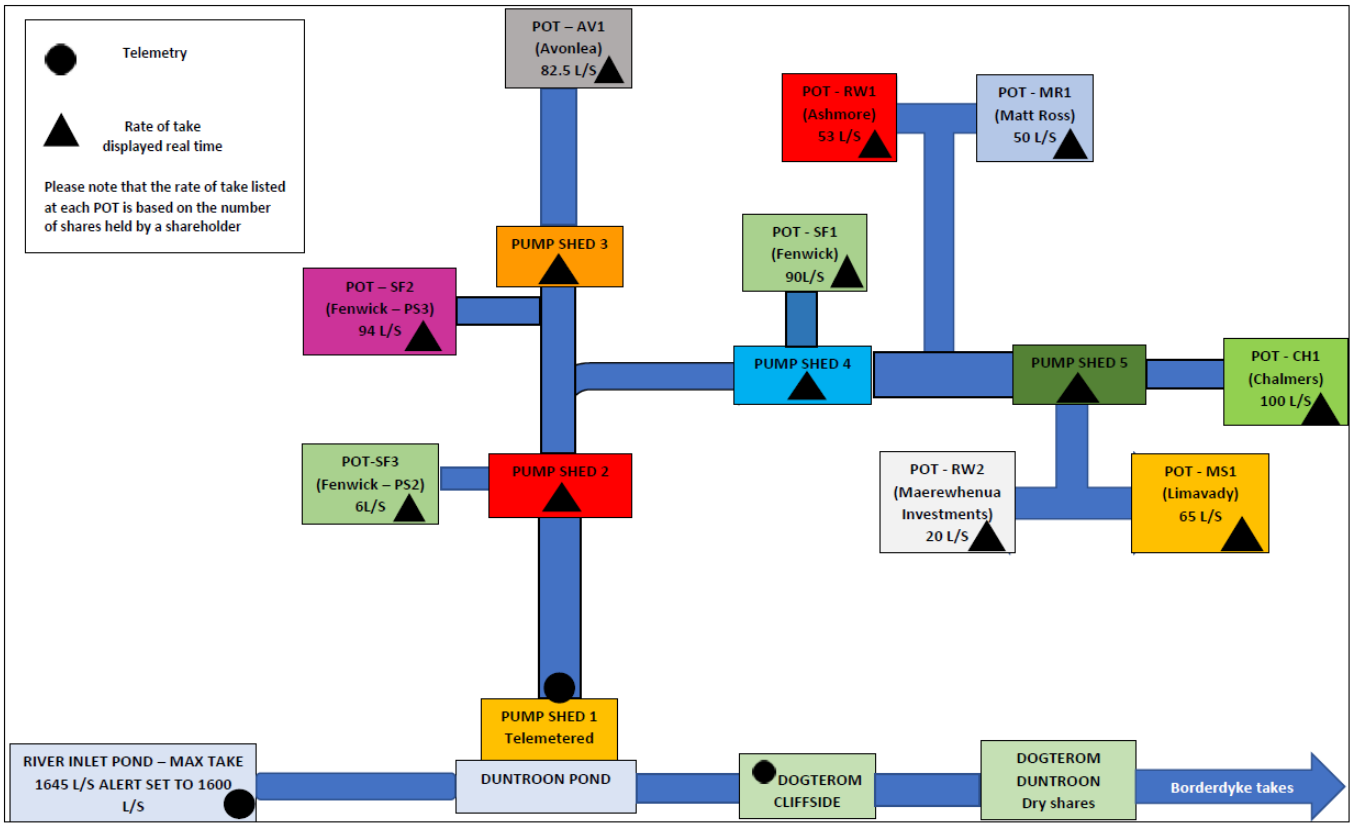
6. STANDARD OPERATING PROCEDURES

6.1. Abstraction Limits

The resource consents held by MDWRC specify upper abstraction limits for the taking of water from the Waitaki River. In order to ensure compliance with these conditions, the scheme monitors volumes and rates of take at the river intake, pump sheds and individual shareholder points of take (POT). The following table and schematic diagram summarise these monitoring points and how they relate to each shareholder.

Shareholder	Consent	Metered POT Site	Individual POT Reference
Ashmore Ltd	CRC233091	Pump Station 1 (PS1) SWAP CB17/5039	POT_RW1
Avonlea Dairies Ltd	CRC233091	Pump Station 1 (PS1) SWAP CB17/5039	POT_AV1
Chalmers Trust Partnership (Whitecliff)	CRC233091	Pump Station 1 (PS1) SWAP CB17/5039	POT_CH1
Steve & Maylene Fenwick	CRC233091	Pump Station 1 (PS1) SWAP CB17/5039	POT_SF1 POT_SF2 & POT_SF3
Kokoamo Farms Ltd	CRC233091	Pump Station 1 (PS1) SWAP CB17/5039	POT_MR1
Maerewhenua Investments Ltd	CRC233091	Pump Station 1 (PS1) SWAP CB17/5039	POT_RW2
Dogterom Cliffside Ltd	CRC180534	SWAP I40/0562	N/A
K & D Farms Ltd	CRC180534 & CRC203646	SWAP I40/0562	N/A
Invernia Holdings Ltd	CRC180534	SWAP I40/0562	N/A
Keeling Dairies Ltd	CRC180534	SWAP I40/0562	N/A
Wills Farm Holdings Ltd	CRC180534	SWAP I40/0562	N/A
Roger Sutherland & Karen Sutherland	CRC180534	SWAP I40/0562	N/A
Dogterom Duntroon Ltd	CRC180534	N/A (not currently utilising)	N/A

SCHEMATIC REPRESENTATION OF FLOW AND ABSTRACTION RATE MONITORING – MDWRC SPRAY CONSENT



Consent	Rate of Take (L/s)	Annual Volume (m3)	Daily Volume (m3)	Three-day Volume (m3)
CRC233091	664	7,387,166	Not specified	Not specified
CRC180534	900	Not specified	77,760	Not specified
CRC203646	81	1,023,000	Not specified	77,760
TOTAL	**1645**			

The POT for all surface water abstractions by MDWRC is via SWAP I40/0562, at map reference NZTM CB17:1558-3180 (also referred to as the river inlet). The maximum rate of take for all three consents at the river intake is 1645L/s as summarised in the table above and is telemetered with real time flow rate being available at all times from the Rubicon Gate meter.

The Operations Manager, while monitoring the rate of take multiple times per hour, also has an alert set at 1600L/s to alert him (via text and email) if the rate of take exceeds this, allowing the opportunity to problem solve before non-compliance becomes an issue.

While compliance with the total rate of take (1645L/s) can be monitored at the inlet pond, individual volumes associated with each consent need to be monitored where they are used. The real-time telemetered data from the Rubicon gate at the river intake is provided to ECan via the Hilltop Database to ensure compliance with all consents.

An additional SWAP number has been created for PS1 (SWAP CB17/5039) which measures take under consent CRC233091 only. This is telemetered to Ecan from 2024/25 season.
It is considered that CRC203646 is "measured" first from the residual of "river take minus PS1" for both annual volume & rate of take. It is not metered separately as the property it is nominally used on holds MDWRC shares allowing flow in excess of CRC203646 limits. Consent CRC180534 accounts for the balance of water taken.

Information from PS1 and individual shareholder annual volumes is supplied to ECan annually within the annual scheme report to allow ECan to understand the allocation of total water across the 3 resource consents.

6.2. CRC233091 Abstraction Limits

All shareholders on the spray extension are serviced via the piped extension, originating via Pump Station 1 (PS1). SWAP CB17/5039 records water flow through PS1; this is telemetered to ECan. Shareholders are subject to an annual volume, based on reasonable use calculations.

6.3. CRC180534 and CRC203646 Abstraction Limits

All shareholders on the rest of the scheme are serviced via the open race system. Those shareholders that have already converted to spray take their water from the open races via their own pump sheds with individual meters installed on their offtakes. These are not telemetered SWAPs, but operation manager has access to the data to monitor race flows and takes. Those shareholders that still use border dyke irrigation have water delivered to their properties via the head race on a 16-day schedule.

The total volume abstracted for CRC180534 and CRC203646 is the River intake SWAPI40/0562 (Rubicon gate meter) – PS1 SWAP CB17/5039

6.4. Methodology for calculating Annual Volumes

Each shareholder under CRC233091 has an annual volume listed in their FEP, which is determined by the number of shares that they hold. Each share entitles the holder to 0.5l/s rate of take to irrigate one hectare. The volume is determined by the reasonable use calculations developed by Irricalc. An annual volume has been determined by the MDWRC from this to be 6400m^3 per share for shareholders utilising spray application. I.e. if a shareholder has 100 shares, they are entitled to (100 shares x 6400m^3/year) x 10 = 640,000m^3/yr.

Consent CRC233091 has an annual irrigation volume of 7,387,166m^3 assigned. There are 1121 shares utilised under this consent by the "spray extension". The annual volume allowed per share is within this consent annual volume if used in full. In addition to an irrigation annual volume, there is also a stock water volume, and a dairy shed water volume allocated to each of these shareholders.

In order to determine the stock water allocation for each shareholder, peak stock figures for each stock class were extracted from shareholder Overseer 2019/20 Year End files. These were then multiplied out against accepted average stock water requirement figures to obtain an annual volume of stock water per shareholder. Note, the accepted average stock water requirement figures were also the same as those used in the application to add stock water to CRC181891 (now CRC233091). These figures were 70l/head/day for milking cows, 45l/head/day for beef or dry cows and 4.5l/head/day for sheep. Dairy cows were classed as milking cows for 320 days per year and dry cows for 45 days per year.
I.e. a shareholder with 500 dairy cows and 200 replacement heifers would be entitled to ((500 cows x 70 litres x 320 days) + (500 cows x 45 litres x 45 days) + (200 cows x 45 litres x 365 days))/1000 = 15,498m^3/yr.

In order to determine the dairy shed water volume for each shareholder, peak milking cow figures were extracted from shareholder Overseer 2019/20 Year End files. These were then multiplied out against 65l/head/day, which is the figure specified in the application to add dairy shed water to CRC181891.
I.e. a shareholder peak milking 450 cows would be entitled to (450 cows x 65 litres x 320 milking days)/1000 = 9,360m^3/yr.

The following table summarises the Annual Volumes for shareholders under CRC233091.

Shareholder	Shares	AV allocated for spray Irrigation (m^3)	AV allocated for Stock water (m^3)	AV allocated for shed water (m^3)	TOTAL Allocated AV (m^3)
Ashmore Ltd	173	1,107,200	12,984	10,088	659,134
Avonlea Dairies Ltd	165	1,056,000	19,149	13,104	1,005,753

Chalmers Family Trust, Whitecliff	200	1,280,000	26,417	18,720	1,225,137
Steve & Maylene Fenwick	380	2,432,000	45,979	33,280	2,321,259
Kokoamo Farms Ltd	100	640,000	21,505	17,264	628,769
Maerewhenua Investments Ltd	103	659,200	18,184	10,400	246,813
Total	**1121**	**7,174,400**	**144,218**	**102,856**	**7,421,474**

Note: stock water allocation updated for Ashmore ltd & Maerewhenua Investments following acquisition of additional land and shares from previous dry-stock property in 2024.

6.5. Restrictions

The resource consents held by MDWRC to abstract water from the Waitaki River include conditions that require the scheme to reduce its rate of take in the event of low river flows. This may result in occasions where the scheme is unable to provide enough water to meet the demand requirements of all water users. Stockwater is not subject to cessation flow restrictions

Reductions in take and/or supply may also occur due to other causes including (but not limited to) natural disasters (such as earthquakes), infrastructure or equipment failures, operational issues, or other unforeseen circumstances. These may affect all or any part of the scheme. While MDWRC will make every reasonable endeavour to meet water users' requirements, the scheme may from time to time be required to impose restrictions on a water users take. MDWRC shall in no way be liable to the water users for any loss arising out of the failure to supply water to the water user at any time/s.

It is important to ensure that all water users comply with the scheme's requirements for the take and use of water. Users not adhering to such requirements and any associated restrictions and rostering system could result in non-compliance against the scheme's conditions of consent, thereby putting the water supply for all users at stake. Any failure to comply immediately following notification will result in a Level 4-8 non-compliance, and associated period of discontinuance of water.

Summaries of the cessation and restriction conditions have been included in this document; however, it is prudent to read these in conjunction with the full consents to ensure compliance is being met for each.

6.6. Default and Minimum Cessation Flows

6.6.1. CRC180534 and CRC233091 Cessation Flows

Both CRC180534 and CRC233091 have the same conditions detailing when the taking of water should cease, based on flows in the Waitaki River. These are summarised below:

a. The taking of water in terms of permits CRC180534 and CRC233091 shall cease[i] whenever the flow in the Waitaki River (expressed in cubic metres per second), as estimated by ECan based on the mean daily flow from midnight to midnight for the previous day at the Kurow recorded site falls below the Default Cessation Flow:

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow (m3/s)	111	111	111	120	142	148	148	142	120	111	111	111

Table 1: Default Cessation Flow for CRC180534 and CRC233091

Unless ECan advises the scheme on or before 31 August of any year, it is a flow calculated by ECan and approved by its Chief Executive.

For clarification, the Cessation Flow is to be determined by ECan in accordance with the Waitaki Catchment Water Allocation Regional Plan and may be a flow between the flows set out in Table 1 above (Default Cessation Flow) and Table 2 below (Minimum Cessation Flow), as a consequence of

[i] For the avoidance of doubt, stockwater is not subject to cessation flow restrictions.

any authorised abstraction of water from the Waitaki River of water for mahinga kai purposes or for the augmentation of Wainono Lagoon.

b. The taking of water in terms of this permit shall cease for a period of 48 hours whenever the flow in the Waitaki River falls below 150 cubic metres per second for a period of ten consecutive days at the Kurow recorder site.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow (m3/s)	100	100	100	109	131	137	137	131	109	100	100	100

Table 2: Minimum Cessation Flow for CRC180534 and CRC233091

6.6.2. CRC203646 Cessation Flows

CRC203646 details when the taking of water should cease, based on flows in the Waitaki River. These are summarised below:

a. The taking of water in terms of permit CRC203646 shall ***cease***[ii] whenever the flow in the Waitaki River (expressed in cubic metres per second), as estimated by ECan based on the mean daily flow from midnight to midnight for the previous day at the Kurow recorded site falls below the Default Cessation Flow:

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow (m3/s)	164	164	164	156	155	155	155	155	156	164	164	164

Table 3: Default Cessation Flow for CRC203646

Unless ECan advises the scheme on or before 31 August of any year, it is a flow calculated by ECan and approved by its Chief Executive.

For clarification, the Cessation Flow is to be determined by ECan in accordance with the Waitaki Catchment Water Allocation Regional Plan and may be a flow between the flows set out in Table 1 above (Default Cessation Flow) and Table 2 below (Minimum Cessation Flow), as a consequence of any authorised abstraction of water from the Waitaki River of water for mahinga kai purposes or for the augmentation of Wainono Lagoon.

b. The taking of water in terms of this permit shall cease for a period of 48 hours whenever the flow in the Waitaki River falls below 150 cubic metres per second for a period of ten consecutive days at the Kurow recorder site.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow (m3/s)	153	153	153	145	144	144	144	144	145	153	153	153

Table 4: Minimum Cessation Flow for CRC203646

6.7. Default and Minimum Reduction Flows

6.7.1. CRC180534 and CRC233091 Reduction Flows

Both CRC180534 and CRC233091 have the same conditions detailing when the taking of water should reduce, based on flows in the Waitaki River. These are summarised below:

[ii] For the avoidance of doubt, stockwater is not subject to cessation flow restrictions.

a. The rate at which water may be taken, in terms of permits **CRC180534** and **CRC233091,** shall be ***reduced*** whenever the flow in the Waitaki River (expressed in cubic metres per second), as estimated by ECan based on the mean daily flow from midnight to midnight for the previous day at the Kurow recorded site is between the Restrictions Flow and the Cessation Flow.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow (m3/s)	164	164	164	173	195	201	201	195	173	164	164	164

Table 5: Default Restrictions Flow for CRC180534 and CRC233091 (for use with Default Cessation Flow)

For clarification, the Restrictions Flow is calculated by adding 53 cubic metres per second to the relevant Cessation Flow. Table 3 shows what the Restrictions Flow would be if the Default Cessation Flow was being used, however if the Cessation Flow is different, the Restrictions Flow will need to be calculated manually.

6.7.2. CRC203646 Reduction Flows

CRC203646 details when the taking of water should reduce, based on flows in the Waitaki River. These are summarised below:

a. The rate at which water may be taken, in terms of permit CRC203646, shall be reduced whenever the flow in the Waitaki River (expressed in cubic metres per second), as estimated by ECan based on the mean daily flow from midnight to midnight for the previous day at the Kurow recorded site is between the Restrictions Flow and the Cessation Flow.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow (m3/s)	190	190	190	182	181	181	181	181	182	190	190	190

Table 6: Default Restrictions Flow for CRC203646 (for use with Default Cessation Flow)

For clarification, the Restrictions Flow is calculated by adding 26 cubic metres per second to the relevant Cessation Flow. Table 3 shows what the Restrictions Flow would be if the Default Cessation Flow was being used, however if the Cessation Flow is different, the Restrictions Flow will need to be calculated manually.

6.7.3. Restrictions and Rostering

If MDWRC is required to restrict the amount of water available to water users, Aqus &/or WIML will develop a rostering or restrictions system for managing a restricted water supply to any or all water users. The rostering or restrictions system may require water users to reduce their rate of take (for example, reduce to 50% of their full rate of take), or reduce their water take for a period of time (for example, reduce to half the usual rostered time for border dyke irrigators).

When developing the rostering or restrictions system, Aqus/WIML will take into account the varying needs and requirements of different water users, including farm system type/stock water use, irrigation system type, and so on. Priority will be given to essential stock water supply. The scheme will ensure that any restrictions or rostering changes occur for as short a time period as possible. Stockwater is not subject to cessation or reduction flow restrictions via consents.

Specific restrictions or rostering processes may be determined by the scheme on a case-by-case basis, depending on the cause and timeframe of the restrictions period.

6.7.4. Restrictions Notification

In the advent of restrictions or rostering changes being imposed due to water shortage, the scheme operations manager will contact shareholders directly (by way of text message and/or phone call) at the earliest possible convenience to advise them of the impending restrictions. Shareholders will be made aware of the specific restrictions or rostering changes that are being implemented and how long these are anticipated to last.

All water users are expected to comply with any such restrictions imposed immediately following notification; Failure to do so will result in the water user being liable for a discontinuance of water supply for a period to be determined by the Directors of the Company (Level 4-8 of non-compliance).

7. FARM ENVIRONMENT PLANS

All shareholders with properties greater than 10 hectares in the MDWRC Command Area are to complete a FEP.

A FEP is an environmental risk-management tool which helps farmers recognise on-farm environmental risks and set out a programme to manage those risks. Each FEP is unique to a property and is reflective of the local climate and soils, the type of farming operation, and the management ideals of the land user.
In terms of the scheme, emphasis is placed on efficient use of water and minimising nutrient losses to water. Additionally, All FEPs created under the scheme require provision for fencing and riparian planting with specific conditions relating to this set out in resource consent CRC233091.

MDWRC has a FEP template which complies with the Objective and Target requirements of Schedule 7 of the Canterbury Land and Water Regional Plan and all other resource consent requirements. *(see section 4 of this SMP). For properties under 10 hectares (a threshold in ECan LWRP), Farm Management Plan content is provided in appendix CRC233091B*

7.1. Farm Environment Plans for New Properties

Within one month of joining the scheme, all new shareholders and/or shareholder enterprises with properties greater than 10 hectares are to supply a copy of their compliant FEP to MDWRC. This will require either:

- Preparing/updating the MDWRC FEP Template for their property; or
- If the shareholder has nominated another primary organisation, ensure the Property's FEP is prepared/updated to include the schedule of MDWRC's FEP's Objectives and Targets (*refer Section 4 of this SMP*). A copy is required to be held by Aqus in MDWRC files.

Within one month of joining the scheme, all new shareholders and/or shareholder enterprises with properties less than 10 hectares are to supply a copy of their compliant FMP to MDWRC.
(Any relevant consent requirements or LWRP rules will be dominant.)

7.2. Farm Environment Plan Area

A FEP is to be prepared, updated and audited for each independently managed operating unit. Examples of an independently managed operating unit include:

1. One shareholding with two dairy sheds, with each dairy shed platform overseen by a sharemilker or manager who is primarily responsible for making day to day decisions for their platform = 2 FEPs
2. One shareholding with two dairy sheds, where stock are grazed and milked on both platforms and overseen by the same manager = 1 FEP
3. Two or more properties and/or shareholdings (under one or more ownership) managed by the same person and where stock are grazed over both properties, and/or crop rotations are managed over all properties = 1 FEP

7.3. Farm Environment Plan Completion

All shareholders of properties greater than 10 hectares are required to update their FEPs prior to a FEP audit and within 12 months of any significant farm management or farm system 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.

The cost of updating FEPs is borne solely by the shareholder

Aqus will provide 60 days notice of the date FEPs are to be updated by, i.e. 60 days in advance of the FEP audit due date. A shareholder may choose to engage the services of an environmental consultant to assist with the updating of their FEP.

It is important that the required information is provided in a timely manner. Failure to comply will result in the process in section 9.7.1. being triggered.

7.4. FEP Audits

7.4.1. FEP Auditor Codes of Conduct

FEP auditors are highly experienced and qualified individuals who are accredited by ECan to ensure audits are completed in a professional, ethical and transparent way. Due to the Audited Self Management (ASM) process, MDWRC are aware of the additional need to ensure audits are completed to a consistently high and robust standard, with sufficient information kept allowing for external reviews where necessary.

MDWRC also see the FEP audits as an essential component of the programme for continuous improvement and expect FEP auditors to consistently engage and support shareholders in their journey towards making the changes needed to improve water quality.

7.4.2. FEP Audit Conflict of Interest

The FEP auditor shall notify Aqus prior to the start of a property's audit, should any of the following relationship/s with the property be identified:

- personal relationship, kinship or business with any company, shareholder or staff being reviewed during the FEP audit; and/or
- any other relationship which may compromise the integrity of the FEP Audit.

If a conflict of interest is identified, Aqus will ensure that either:

- the FEP audit and report is completed by an alternative suitably qualified auditor; or
- the FEP audit and report is attended by and co-signed by another suitably qualified auditor.

7.4.3. Farm Environment Plan Audit Process

All FEP audits will be completed by a suitably qualified professional in accordance with the most recent version of the *Canterbury Certified Farm Environment Plan Auditor Manual*. All FEP audits and supporting information may be subject to external peer review to maintain transparency in the FEP Auditing process and outcomes. The cost of FEP audits and any associated updates required to complete the audits shall be borne solely by each shareholder. Audit costs may be billed directly by the Auditor to the Shareholder, or if charged via MDWRC, will be on-charged at cost. A higher audit grade means less frequent auditing and therefore lower compliance costs.

7.4.4. Start of Season Audit Identification

Each year, Aqus will identify the properties to be audited during the coming season. Factors to be considered when creating a list of properties to be audited include:

- Any property due for an audit this coming season, based on their previous grade.
- Any new shareholders (either transferred or recently joined).
- Any shareholder where a change of management/ownership or farm system was identified.
- Any shareholder property in development where Irricon or MDWRC felt it appropriate to audit more frequently.
- Any shareholder using water under ORC consent RM13.046.01.V1 which requires an annual audit regardless of the previous grade received.

Aqus will contact Irricon to contract audit services for the season and provide a list of properties requiring an audit, contact details and access to FEP files and other relevant information.

Shareholders are to be given 60 days notice to update their FEPs ahead of audits; notice is to be given to shareholders that they are on the audit list for the upcoming season by 1st September each year. The complete list of properties due for a FEP audit will be provided to MDWRC and Irricon (as contracted auditors) by the 1st September each year.

7.4.5. FEP Audit Scheduling

Audits are scheduled directly with the shareholder by the auditor engaged on behalf of MDWRC. shareholders will be given at least 10 working days' notice of their FEP audit, unless the shareholder requests the audit is completed in less time. The auditor will confirm the FEP audit date, time and assigned auditor via email.

7.4.6. FEP Audit Cancellation

The auditor will book FEP audits according to consent requirements, land use and location at least 10 working days prior to the audit. Wherever possible, audits will be timed to avoid high workload periods e.g. during calving for dairy farms, during harvest for arable properties etc.

The shareholder will have an opportunity to defer audits to another day at the time of booking, but late cancellation can cause the auditor to have significant down time between audits and/or increase travel time and costs. Therefore, shareholders are expected to provide at least 5 working days notice to enable the auditor to book another shareholder in that time slot. Shareholders will be liable for the costs of re-auditing their property if they cancel their pre-arranged audits with less than 5 working days' notice.

7.4.7. FEP Audit Procedures

All FEP audits will be conducted in accordance with the most recent version of the FEP Auditor Manual. FEP audit reports shall be graded in accordance with the guidelines set by the FEP Auditor Manual, and any standards agreed through Environmental Canterbury or MDWRC FEP Auditor consistency meetings. *See link at Appendix 4.*

7.4.8. Notification of Non-Compliance

Where the FEP auditor identifies a potential breach of this SMP, a resource consent or a Permitted Activity rule, they are to immediately advise the shareholder of the breach and inform Aqus/MDWRC.

7.4.9. FEP Audit Reports

All FEP audit reports will be completed using the most recent FEP Audit Template available from ECan. Where a farm land Use (FLU) consent is applicable, the FLU conditions dictate the audit format, while recognising MDWRC consent conditions

7.4.10. FEP Audit Draft Report Correspondence to Shareholders

Shareholders are to be provided with the draft FEP audit report/s via email by the FEP auditor within 10 working days of the FEP audit report being completed. From the first working day following the communication of the report the shareholder will be entitled to 10 working days to advise if there is any:

- Factually incorrect information included in the original draft report; and/or
- Further information or evidence provided

7.4.11. FEP Audit Final Report

If no feedback is given after 10 working days, the draft audit report is automatically finalised. Where the FEP auditor has received feedback from either the shareholder or MDWRC/Aqus staff relating to the draft FEP audit report, the FEP auditor will update the FEP audit report to reflect this information within the 10-working day period. Any feedback given, or amendments made will not extend the 10-working day feedback period.
The FEP auditor will submit the finalised FEP Audit report to ECan via the ECan FEP Auditor Portal, referencing the relevant scheme consent. A Final copy will be sent to Aqus to hold on MDWRC files.

FEP auditors will keep records of and make available to MDWRC on request, any of the following information collected during the course of the FEP audit:

- all written shareholder communications, including audit scheduling
- field notes (if available)
- photographs
- nutrient budget robustness checks
- Any other relevant information used to inform the Level of Confidence grades of the FEP Audit.

7.4.12. FEP Audit Disputes Process

The aim of the process is to ensure all shareholders are graded fairly and in accordance with the most recent version of the *Canterbury Certified Farm Environment Plan Auditor Manual*. The FEP auditor should also always conduct themselves in a professional and constructive manner.
If within 10 working days of receiving the finalised FEP audit report from the FEP auditor, a shareholder disagrees with the outcome of a FEP audit, they are entitled to have their audit peer reviewed and/or the conduct of the auditor investigated, as described in the below figure.

FEP auditors are accredited by ECan and are subject to the codes of conduct and ethical standards. If a shareholder feels the FEP audit may be in breach of these standards, and they are unsatisfied with the scheme processes, they may choose to lodge a complaint with the accreditation authority. Further information is available from ECan

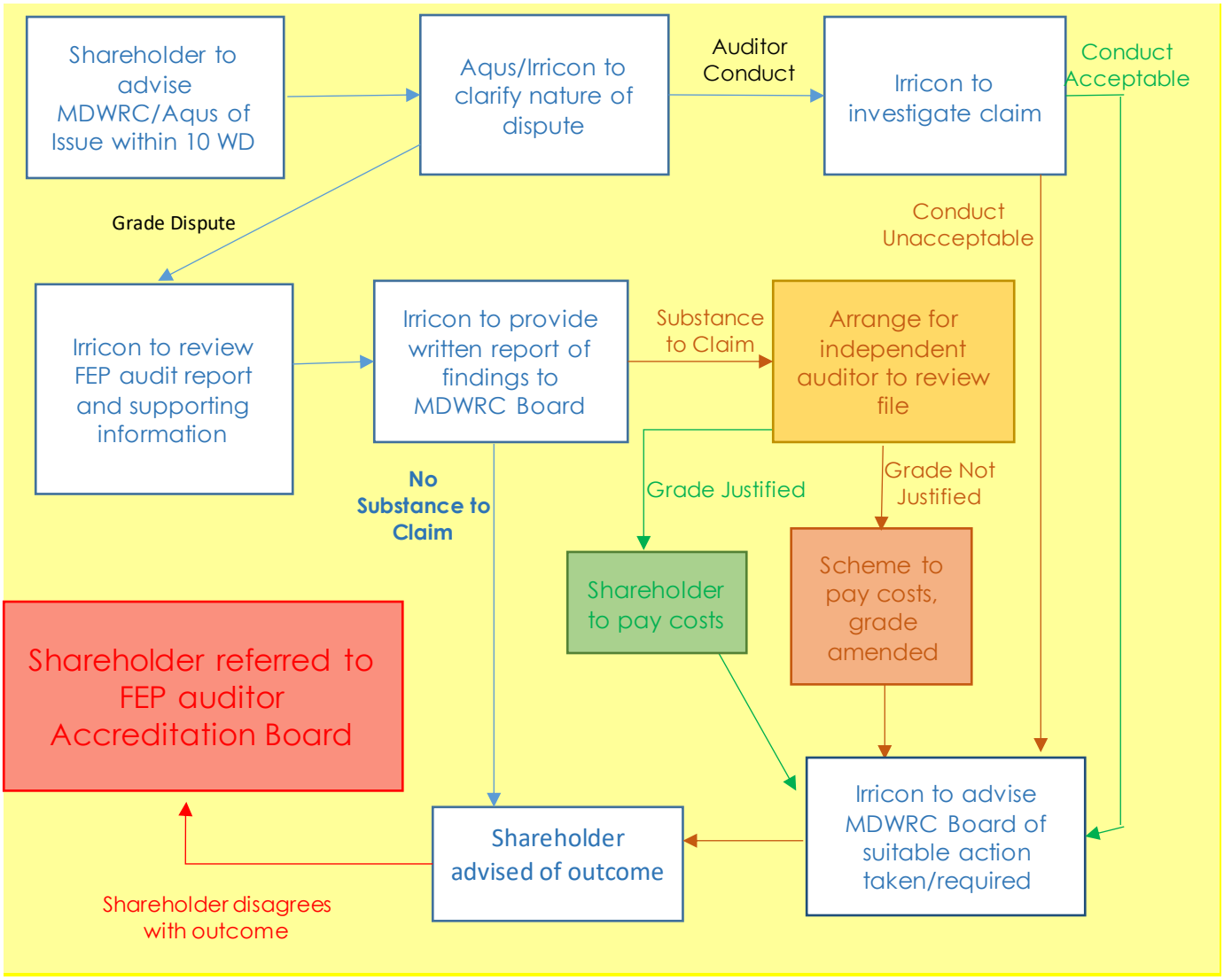


Figure 1: FEP Audit Dispute Resolution Process

7.4.13. Farm Environment Plan Audit Grade Follow Up

Shareholders may receive recommendations for improvements when given an "A" or a "B" grade. It is expected the shareholders will be pro-active in implementing these recommendations and will not be actively followed up with. Email check-ins with reminder of audit actions will be sent out to shareholders approx. 6-9months following the audit, with supporting information if required, and again when notice of the next audit is given.

Shareholders who received "C" or "D" grades are not on track to meet the requirements of their FEP and need to be supported to improve their grade during their next audit cycle.
Repeated "C" or "D" grades will escalate through the sanction process as shown in Figure 2.

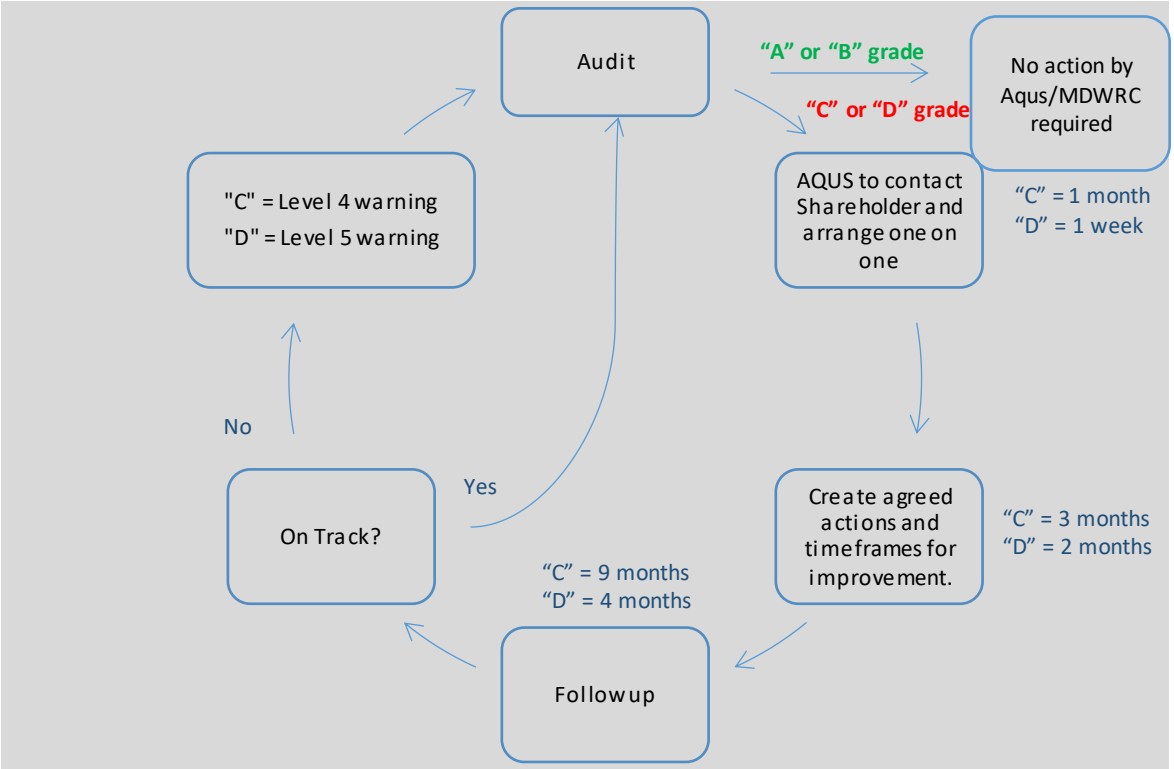


Figure 2: FEP Audit Grade Follow Up Process

7.4.14. Shareholders with Individual Farm Land Use Consents (FLUs)

FEP and audit requirements are specific to consents CRC233091 & CRC203646 held by MDWRC. Those shareholders on the "border dyke" consent CRC180534, abstracting from the race system, are not required by MDWRC consent to have FEPs or audits. However, these shareholders have farm land use consents for nutrient management purposes, with their own FEP and audit requirements to meet. MDWRC is not responsible for requiring or maintaining FEPs or audits for these shareholders. Copies can be requested by the scheme under water supply agreement clauses.

Shareholder	**FLU Consent**	**Expiry**
K & D Farms	CRC200054	September 2034
Wills Farming (Haricot)	CRC200985	November 2034
Invernia Holdings	CRC213058	December 2033
Dogterom Duntroon	CRC250652	August 2039
Dogterom Cliffside	CRC25081	August 2039
Keeling Dairies	N/A- Covered as 'Permitted Activity' by status of KDIC consent, managed by KDIC	
R & K Sutherland, K Sutherland (2 Shareholder parcels)	*Has Schedule 7 FMP, has not previously been captured by FEP & Audit requirements.*	

7.5. Compliance Checks

Through the water supply agreement, and as a condition of the MDWRC consent, there is provision for access on to the property in order to undertake an audit and/or to undertake spot checks of compliance with the implementation requirements of the Farm Management Plan and/or to undertake environmental monitoring in accordance with the requirements of the resource consent for the scheme. A check may be in the form of a phone call, text, an email with request for information or action, or a visit to site. Compliance drives are undertaken through the scheme command area at regular intervals during the irrigation season. Communication direct to a farm manager or shareholder will occur if an issue is observed or reported.

The scheme recognises that those shareholders receiving a lower audit grade (and therefore a lower level of confidence) require more frequent spot checks than those meeting expected grades (A & B).
Notice of spot checks will not necessarily be given to a shareholder ahead of time as it is expected that GMP and all scheme directives are being followed at all times.

8. WATER QUALITY MONITORING

Consent CRC233091cl.19 requires monthly water quality monitoring at two surface water and three groundwater locations. If specified parameters are exceeded, CRC233091cl 20-24 sets out the monitoring response, including peer reviewed reports and remedial action plans. (See consent CRC233091 for more details.)

Consent conditions allow for monitoring and response to be undertaken on an individual or collaborative basis. Shareholders operating under individual FLUs also have some of these requirements. Additional water quality monitoring sites and/or variables may be included for scheme purposes, and not subject to the reporting obligations to ECan.

8.1. Locations, variable & parameters

Location (surface Water)	**DRP Annual median (mg/L)**	**Nitrate Nitrogen (mg/L)**		**Ammoniacal Nitrogen (mg/L)**	
	Annual median	**Annual median**	**95th percentile**	**Annual median**	**Annual maximum**
Waitaki River at SH1	0.001	0.054	0.188	0.002	0.007
Maerewhenua River at SH83	0.002	0.144	0.633	0.005	0.027

Location (Ground Water)	**Nitrate Nitrogen Concentration**		**E.coli**
	Maximum Concentration (mg/L)	**Annual Average Concentration (mg/L)**	**Annual Median (MPN/100ml)**
Upstream Bore I40/0538	11.3	2.1	<1
Downstream Bore J41/0062			
Adjacent Bore J40/0977			

8.2. Reporting timeframes & response

The results of all sampling shall be provided to the Canterbury Regional Council Attention: Regional Manager, RMA Monitoring and Compliance by **30 May** each year. This shall include copies of reports from the laboratory that undertook the analyses. In order to calculate Annual Median, 95th percentiles, averages and maximums, the reporting timeframe will be considered the 12 months up to the April water sample result each year. If the monitoring undertaken shows that a corresponding limit been exceeded, a report will be commissioned into the cause of the exceedance and submitted to ECan by **30 July** that year. If required a Remedial Action Plan will be prepared and provided to the ECan by **30 September** that year, or prior to any irrigation commencing for the season; whichever is sooner. (See CRC233091 for full consent conditions)

8.3. Report on exceedances

If there is a limit breach, A report is to be prepared by a suitably qualified and experienced independent scientist and peer reviewed by a suitably qualified person or reviewed by Canterbury Regional Council Scientist(s). It is to include the experts' conclusion on whether the exceedance(s) were as a result of natural influences, influences outside the consent holder's control, or in whole or part by the use of land authorised

by this consent, or by nutrient loss associated with the farming practice authorised by this consent; and Include an assessment as to whether the exceedance measured by the monitoring is likely to continue.
If both the author and peer review of the report conclude, after considering all the relevant available information (including on-site monitoring, sub catchment monitoring, and catchment resource consent compliance and audit reports that:

a. The exceedance of a level in Schedule CRC233091 was unlikely to have been caused in whole or in part by nutrient loss associated with the land use authorised by this consent, then no further action needs to be undertaken by the consent holder; or

b. The exceedance of a level in Schedule CRC233091 was likely to be caused in part or wholly by the land use authorised by this consent, then the consent holder shall engage an independent, suitably qualified person to prepare a Remedial Action Plan (RAP), which must include mitigation recommendations to ensure that the water quality limit(s) in Schedule CRC233091 are met, to the extent that exceedance(s) are determined to be a result of the farming activity authorised under this consent, including if a reduction in the consented loss limit is required, the quantum of the reduction if required, and the date at which the reduced consented loss limit is to apply from.

8.4. Remedial Action Plan

If a Remedial Action Plan (RAP) is required, this prepared by an independent, suitably qualified person and shall be provided to ECan by 30 September that year, or prior to any irrigation commencing for the season; whichever is sooner. Immediate action to reduce nutrient losses from the property/scheme as identified in the RAP will be undertaken. These actions shall be recorded and provided to ECan upon request. Any measures required by the RAP are to be implemented within the timeframes specified in the RAP. It shall set out the methods altering and/or adapting farm land use practices, including irrigation management practices, to ensure that the exceedance of the limit is returned as soon as practicable to the specified level for the relevant monitoring site. The RAP shall set out timeframes for implementing the methods described above, including immediate action to reduce nutrient losses from the property. If the RAP is prepared in collaboration with other consent holders who are required to prepare a RAP for this sub catchment a common RAP shall be deemed to comply with this condition. Any actions required by the RAP shall be incorporated into the consent holder's FEP. The amended FEP shall be implemented as soon as physically possible.

9. SCHEME MAINTENANCE

The scheme has a rigorous maintenance schedule incorporating everything from regular visual inspections and certification of meters, through to calibration of meters and flow gauging to check for race losses.

9.1. Flow Meter Verification and Calibration

The MDWRC consents require flow meters to be verified and calibrated at certain intervals to ensure the meters are well maintained and accurate data is being obtained.

The following table shows the scheme consented water meters and their associated frequencies of calibration/verification.

Meter Name	Meter Location	Related Consents	Timing of Calibration check (Meter)	Timing of Verification Flow Gauging (Race)
Intake Gate (SWAP I40/0562)	NZTM 1415580, 5031800	CRC233091; CRC180534; CRC203646	5 yearly certification of install	Annually in October
Pump Shed 1 (PS1) (SWAP CB17/5039)	NZTM 1417546, 5030626	CRC233091	5 yearly (from Feb 2021)	N/A

In order for the meter at PS1 to undergo flow gauging and verification the main line needs to be exposed. While the site has been re-filled due to the nature of the hazard of an open pit remaining, the site remains marked for ease of testing at 5-yearly intervals. All verification and calibration certificates for the above meters are provided to ECan as soon as practical after each test.

9.2. Rubicon Gate Water Meter

The intake gate at SWAP I40/0562 is a Rubicon SlipMeter. this is a factory calibrated flow meter with fixed geometry and physical characteristics and has a flow accuracy ±2.5% in accordance with AS 4747 and ISO 4064/OIML R 49. Accuracy of the 600mm SlipMeter has been verified by Manly Hydraulics Laboratory in April 2011 and Provost & Pritchard in November 2011. Rubicon have advised there is no field calibration available or required for this meter. Verification of flow gauging is carried out annually in accordance with CRC233091and ECan requirements.

9.3. Avoiding leakage from pipes and structures

CRC233091 requires the scheme to avoid leakage from pipes and structures. The scheme carries out the following checks/maintenance to ensure any leakage is avoided:

9.3.1. Intake Pond

MDWRC regularly checks static levels in its intake pond during periods of no water demand using a standard industry gauge marker for signs of pond leakage. The pond was originally designed and constructed by Rooney Earthmoving and had a solid liner of 200mm of silt compacted with 150 mm gravel and 65mm of rip-rap on top.

9.3.2. Piped Spray Extension

MDWRC piped infrastructure is a pressurised scheme. As such, any potential pipe leakage would be alerted by pressure losses in the system and or visible surface leaks due to the pressure the scheme is operating under. During periods of no water demand, the system maintains nominated pressure with SCADA records monitored routinely for any potential change in static pressure which would indicate leakage.

9.3.3. Open Channels

All of MDWRC open channel races are periodically flow tested by Boramans (at least annually) to indicate any race losses. MDWRC has an ongoing routine maintenance programme to repair any leaks as they occur, and a budget is allocated by the Board each year specifically for this work.

10. SHAREHOLDER PERFORMANCE MANAGEMENT

10.1. Continuous Improvement

FEPs are living, dynamic tools which are used to improve overall knowledge and understanding by the users. Through the process of updating FEPs, risks are identified and a plan, together with a list of actions is developed. MDWRC ensures shareholders are held accountable for their on-farm actions through the auditing process. The audits require shareholders to demonstrate their progress with meeting environmental targets and objectives through providing evidence.

10.2. Shareholder Compliance

MDWRC will ensure that Shareholders comply with the scheme requirements for take and use of water, and the FEP processes. Wherever possible, MDWRC will work with shareholders to encourage voluntary compliance. This will be achieved through the following:

- Each shareholder will be provided with a checklist of requirements including the dates by which the information needs to be provided to the scheme (*refer Schedule 5*).
- From time to time, a scheme newsletter will be circulated to all shareholders with relevant updates and useful information. Emails for a particular purpose will also be sent to shareholders as and when required
- Spot checks/compliance drives carried out by Aqus on shareholder properties in line with the procedure outlined in section 7.5 of this SMP.

10.3. Shareholder Non-Compliance

Individual users who do not adhere to the contract arrangements can put the consent for the whole scheme at risk. MDWRC therefore has developed various processes to address such non-compliance.

10.3.1. MDWRC Breach of Water Agreement Process

Where a breach of the WSA has been identified through the audit process in relation to the non-compliance of consent conditions, provisions 7.9(h)- 7.9(j) of the WSA can be initiated. These provisions permit the scheme to temporarily prohibit the delivery of water to the property from the commencement of the following irrigation season until such time as the remedial actions in accordance with a written notice, have been completed.

Furthermore, failure to remedy a breach of any condition, provision or covenant of the WSA within seven days of receiving a written notice from the scheme, may result in the immediate cessation in the supply of water to the Property as per clauses 11 and 12 of the WSA.

Where a Shareholder fails to carry out, within a reasonable timeframe, any necessary work or repairs in accordance with a written notice given by or on behalf of MDWRC, then MDWRC is entitled to enter the property and carry out the required work or repairs, the cost of which is to be recovered from the Shareholder.

Prior to (and during) the initiation of any sanction, educational processes and support will be provided.

Considering the above WSA provisions, the MDWRC Board have developed the processes outlined in Sections 8.4. to 8.8.

10.3.2. Consideration of Historical Breaches of WSA

Any notice of a breach of the WSA will be taken into consideration for three years if subsequent breaches occur in this time, unless the property has been sold during this time.

10.3.3. Changes in Property Ownership or Management

Where a shareholding, subject to the non-conforming shareholder processes, has been sold or transferred to another entity, the new owners of the shareholding will be advised of any historical breaches of WSA and are expected to address the issues within the timeframes set out in the existing FEP, FEP Audit or any Corrective Action Request issued to the property. Where future breaches of the WSA are identified under the new ownership, MDWRC may use their discretion in their enforcement decisions regarding the history of the property.

10.3.4. Non-compliance Levels and Repeated Non-Compliance

MDWRC have developed seven possible levels of non-compliance with the consents held, including breaches of the WSA, ranging in consequence from a formal verbal warning (Level 1) to a suspension of the supply of water (Level 7).

The principle behind the various levels of non-compliance is to ensure the response to the breach is proportional to its significance. Repeated minor breaches will result in an escalation of consequences over time. Major first breaches will be assigned higher level consequences, as indicated by the Schedule of Non-compliances table (*refer Section 8.4.6 of this SMP*).

The warning period given in relation to a cease water notice, will in accordance with the WSA, depend on the nature of the breach. If the actions required by the notice are proven to be resolved within the warning period, MDWRC may, at their discretion, permit the continuing take of water during the notice period. The issuing of the cease water notice will, however, be taken into consideration should any further breaches occur at a later date.

10.3.5. Verbal and/or emailed Request – Level 1

Prior to any formal action being taken against a shareholder for failing to meet their obligations under this SMP, they will be verbally advised of the following by either the scheme operations manager or Aqus environmental team (depending on the nature of the obligation in question):

- their requirements; and
- when these requirements are expected to be completed; and
- the potential consequences should these timeframes fail to be met.

Records of all verbal requests will be held and referred to if further action is deemed necessary.
(An email request for action/information, containing the above points, is also considered to meet this step)

10.3.6. Formal Written Warning by MDWRC Board – Level 2

Should the requirements and timeframes of the request in Level 1 not be met, a formal written warning will be issued by the MDWRC Board. The shareholder will be advised of the actions they must take and will be provided with a reasonable timeframe for completion. Each formal warning will detail steps MDWRC will take if the issue is not rectified within the specified timeframes.

10.3.7. Contact by scheme manager or an Auditor – Level 3

Where a breach is deemed 'high risk' (i.e. relating to an effluent, water quality or public safety issue), or where a previous request or formal written warning has not been adhered to, and depending on the nature of the breach, direct contact from Aqus will occur. Depending on the nature of the issue, Aqus may arrange a contact by an auditor as soon as is practicable. The cost of any auditor involvement will be borne by the Shareholder.

10.3.8. Cease Water Notice – Levels 4-6 (at discretion of the Board)

A Cease Water Notice may be issued for different periods of time depending on the seriousness of the non-compliance requiring action by MDWRC. The levels are:

- Level 4: 24 hours
- Level 5: 7 days
- Level 6: Indefinitely until issue is resolved

If the breach occurs during the winter season the water will be turned off at the commencement of the following season provided the necessary notice period is achieved.

In the event that a shareholder is issued a Level 4, 5 or 6 notice, they will be given the opportunity to explain the reasons for the breach(s) to the MDWRC Board.

10.3.9. Termination of Water Supply – Level 7

Should the MDWRC Board determine that a breach or continued breaches of the WSA cannot be remedied, then the Board may terminate the supply of water to a shareholder in accordance with the WSA. In this case, a period of fourteen (14) days written notice will be given to the Shareholder.

In the event of a termination in the supply of water, Aqus, on behalf of MDWRC, will formally notify ECan of the breach.

10.3.10. Schedule of Non-Compliances Table

The following table summarises the seven non-compliance levels as detailed in sections 8.4.1 - 8.4.5 above and gives examples of possible consent/WSA breaches and associated actions to be taken.

Non-compliance Level	Example Offence	Off-season Action	Irrigation Season Action
Level 1: Verbal/email Request	Required information not provided on time	Verbal/email Request Issued – actions and timeframes provided	
	Stock grazing in waterways		
	Debris (silage wrap, containers, dead stock or any other toxic matter) in the water race		
Level 2: Formal Written Warning	Required information not provided on time without a valid reason, following a verbal request.	Written warning by Board – actions and timeframes to be provided	
	Regulatory non-compliance issues not resolved within agreed timeframes (including non-adherence to Level 1 request, e.g. repeated stock grazing in waterways or repeated debris in or around the race)		

Non-compliance Level	Example Offence	Off-season Action	Irrigation Season Action
	Repeated confirmed incidents reported in complaints register with no subsequent actions taken to remedy the issue		
Level 3: Contact by Aqus (or Auditor)	Required information not provided on time without a valid reason after Level 2 notice issued.	Contact by Aqua (or auditor at shareholder's cost) - Remedial actions required and timeframes to be provided to the Shareholder	
	Level 2 repeat non-compliance offences		
Level 4: Cease Water Notice (Duration - 24 hours**)	No remedial action taken by the shareholder following a Level 3 warning	First 24 hours of water not provided at start of irrigation season with 7 days' notice - Remedial actions required and timeframes to be provided to the Shareholder	Cease water for 24 hours with 7 days' notice - Remedial actions required and timeframes to be provided to the Shareholder
	Not on track following a "C" grade audit (refer Figure 2)		
Level 5: Cease Water Notice (Duration - 7 days**)	No remedial action taken by shareholder following a Level 4 warning	First 7 days of water not provided at start of irrigation season with 7 days' notice - Remedial actions required and timeframes to be provided to the Shareholder	Cease water for 7 days with 7 days' notice - Remedial actions required and timeframes to be provided to the Shareholder
	Two "C" audit grades within two years		
	Not on track following a "D" grade audit (refer Figure 2)		
Level 6: Cease Water Notice (indefinite until issue is resolved**)	Second "D" within 12 months or three "C" audit grades within three years	Water not provided at start of irrigation season with 7 days' notice until such time as the issue has been resolved - Remedial actions required and timeframes to be provided to the Shareholder	Cease water for an indefinite period of time with 7 days' notice until the issue is resolved - Remedial actions required and timeframes to be provided to the Shareholder
Level 7: Termination of Supply of Water	Persistent "D" or "C" grades, with no progress with resolving issues	Suspension of the supply of water with 14 days' notice ECan and/or ORC to be notified	
	Continual breach of agreed action plans or requests for improvement.		

****While levels 4-6 of the Non-compliance table detail specific durations for water suspension; these durations are always at the discretion of the board**.

10.3.11. Process to Cease Take of Water

To be followed where a breach of the Water Supply Agreement has been identified, and a temporary shutdown of in-season irrigation water supply of a customer is required.

Prior to Shut-Down Period

The MDWRC Board will decide on the details of the breach notice, including:

- the date at which the notice period begins; and
- the date at which the shutdown is to commence; and
- the period of shutdown.

The operations manager will be notified of the details of the breach notice and will act on them accordingly.

During Shut-Down Period

The operations manager is to monitor offtake during the shut-down period. If the shareholder continues to take water during the advised shut down period, the operations manager will remind the shareholder of the shut-down.

Continued Water Take during Shutdown

If shareholder continues to take water, a decision may be made by the MDWRC Board to physically shut-down the Shareholders off-take to prevent any further water being taken.

10.3.12. Charges Incurred

In accordance with clause 7.9(k) of the Water Supply Agreement, where a Level 4 or higher notice has been issued and water is turned off, a Shareholder is still liable for any Water charges throughout the period during which supply of water is suspended.

Shareholders and Associated Properties are liable for any costs incurred by the scheme for the follow up of non-compliances.

10.4. Other Procedures

10.4.1. Provision of Information

All shareholders are required to provide certain information to comply with MDWRC's resource consents. Aqus, on behalf of MDWRC, will ensure that

a) shareholders are aware of what information needs to be provided
b) provide suitable support, and
c) allow a reasonable amount of time for shareholders to comply with the request.

Where shareholders do not provide required information within the specified timeframes, the following procedure will be implemented.

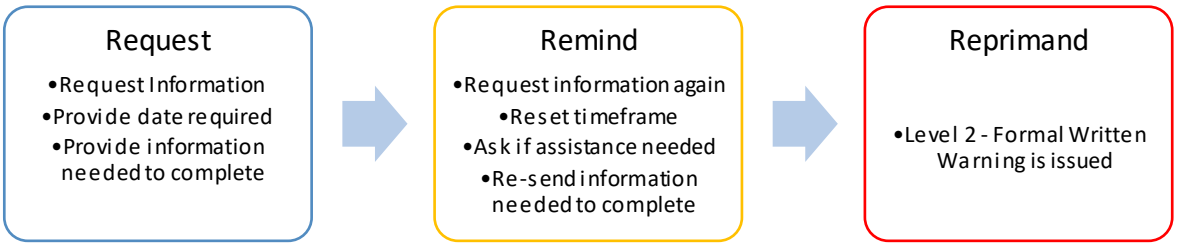


Figure 3: Process for failing to provide information on request

10.4.2. Notification of non-compliance

If a shareholder is found to be significantly non-compliant with a resource consent, there is a risk the shareholder will not achieve an "A" or "B" grade during their next FEP audit, unless practices or systems have improved.

The aim of this process is to support the shareholder where issues have been identified to ensure high- or medium- level of confidence standards are achieved during their next FEP audit.

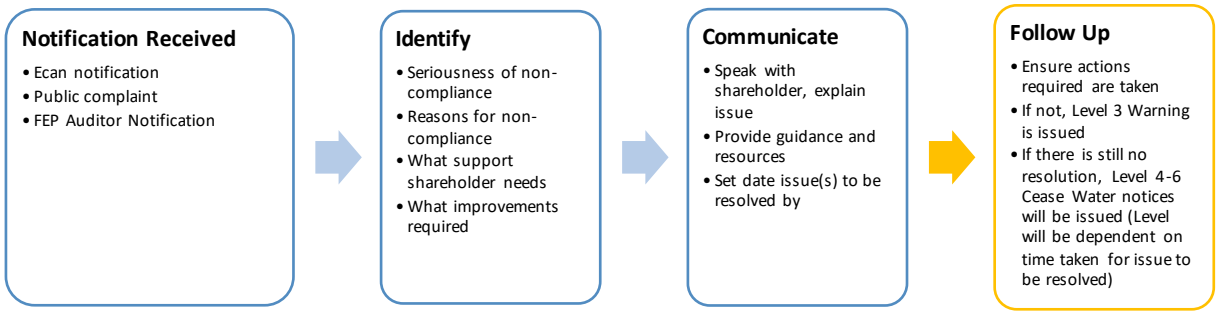


Figure 4: Notification of non-compliance process

10.4.3. Circulation of SMP to New Shareholder and FEP Implementers

All new shareholders and FEP Implementers will receive a copy of the SMP and key procedures within one month of becoming a MDWRC shareholder. This will be emailed out in PDF form by Aqus as scheme managers.

It is recommended that all new shareholders and FEP Implementers attend an irrigation management workshop or demonstrate an equivalent level of training prior to their next FEP audit i.e. subsidised IrrigationNZ online training, relevant AgITO course

10.4.4. Complaints Register

If a complaint is received or a potential non-compliance issue is identified, the information will be registered in the Complaints Register, within Aqus files, by the Aqus environmental team.

Examples of potential non-compliance include (but are not limited to):

- Irrigators applying water or effluent across the road
- Dairy effluent ponding
- Debris in the water race
- Stock in waterways

Where possible, the following information will be recorded:

- Date, time and precise location of the event (sufficient enough to identify shareholder and particular machine, or any other relevant information) and
- Date and time the event was notified and
- Photographs and/or GPS co-ordinates and
- What was seen and
- Details of the complainant (to be kept confidential).

Continual (more than three) 'low risk' offences will result in a Level 3 warning being issued, which will involve the shareholder being contacted by Aqus for an on-farm visit, or if necessary, contact from Irricon, the cost of which will be borne by the shareholder.

If the complaint is deemed 'high risk' (i.e. relating to an effluent, water quality or public safety issue), as soon as practically possible, the shareholder will be visited by Aqus or an auditor (Level 3 Warning), the cost of which will be borne by the shareholder.

In any case where a complaint requires a shareholder to be contacted &/or visited by Aqus, the Aqus environmental team will forward a brief report to the MDWRC Board as soon as practicable, detailing the issue, what mitigations were agreed on, and a timeframe for the actions to be implemented, the cost of which will be borne by the Shareholder.

Depending on the issue and the actions agreed on, either Aqus or MDWRC will follow up with the shareholder after this initial contact or site visit to ensure timeframes are adhered to (the person/s responsible will be identified in the report). The cost of this follow-up will be borne by the Shareholder.

11. RESPONSIBILITIES SUMMARY

11.1. Key Irrigator Responsibilities:

	Responsibility	Relevant WSA clause	Relevant Consent Clause
Backflow Prevention	• If the irrigation system is used to distribute effluent, fertiliser or added contaminants, and effective backflow prevention must be installed and tested at the time of installation and annually thereafter by a suitably qualified person. The test report is to be provided to ECan **within two weeks** of each inspection.		CRC233091 cl. 11 CRC203646 cl. 10
Compliance	• Allow the scheme manager or a nominated representative, ready access to the property to undertake FEP Audits or undertake spot checks of compliance and implementation of requirements of the FEP and/or to undertake environmental monitoring in accordance with the requirements of the MDWRC consents.	7.9(e)	CRC233091 cl. 17c.
FEP & FEP Audits	• Ensure the Farm Environmental Plan which covers the Property is adhered to and kept up to date.	7.8(e)-(h)	CRC181891 cl. 14d, 17a,b CRC203646 cl. 12,13 and Sch. 7
	• Ensure auditing of the Property's Farm Environmental Plan is undertaken in a timely manner and with all required documentation and evidence.	7.9(d)	

	• The Shareholder shall manage their farming activity in such a way to achieve and maintain a FEP Audit Grade of 'A' or 'B'		CRC203646 cl. 14
General Maintenance	• Ensure any natural, permanently flowing surface waterway is permanently fenced, and any other waterways (e.g. ephemeral, intermittent, springs etc) are fenced with temporary fencing to exclude stock when they are grazing in the area. All fencing is to be maintained in a good state of repair.	5.1(a)(f)	CRC233091 cl. 15.
	• Repair any stock damage to the pipes running through the Property.	5.1(b)	
	• Remove all trees growing beside pipes identified by the scheme as having the potential to limit the efficient maintenance, flow and operation.	5.1(d)	
	• Maintain any drainage works on the Property carrying surplus irrigation or flood water.	5.1(g)	
	• Allow the scheme ready access to the pipes for repair and maintenance.	5.1(j)	
	• Minimise the discharge of runoff, chemicals, effluent, debris, dead stock or other toxic matter from the Property.	5.1(h) & 7.2	
Irrigation Infrastructure	• For all shareholders where the irrigation system on the Property is used to distribute effluent, ensure that an effective backflow prevention device is installed, that this device is tested annually by a suitably qualified or certified person and that the test is provided to the scheme within one week of each inspection.		CRC233091 cl.11
	• Ensure all new irrigation infrastructure is designed and accredited by a qualified professional, and installed in accordance with the accredited design, taking into account the specific requirements of the property's soil types. *Link: Appendix 2*	7.9(l)	CRC233091 cl. 16
	• Ensure a representative sample of the irrigation system is assessed via irrigation evaluation (bucket test) each season to determine application depth and uniformity and make any necessary changes if system not performing to expected standards.		CRC233091 Appendix CRC233091A FEP template
Nutrient Reporting	• Put in place recording practices that will ensure records shall be maintained throughout the year of the farm management practices and associated data that will be used as inputs to model your nitrogen loss in an annual nutrient budget (Overseer).	7.9	CRC233091 cl.13 CRC203646 Sch. 7
	• Ensure that nutrient budgets **1st July to 30th June** (Overseer) are updated annually by the **31st August each year (or as requested)**. Also ensure that 'Irricon Resource Solutions' has been granted permission to access the OverseerFM account order for the scheme Nutrient Report to be complied and forwarded to Canterbury Regional Council for compliance.	7.8(d)	CRC233091 cl.13.
Water Use	• The annual volume of water provided to each property by the consent holder shall not exceed the volume identified in the FEP for that property (i.e. does not exceed that required for the soil to reach field capacity).	7.9(n)	CRC233091 cl. 17e
	• Ensure that leakage from pipes and structures is avoided and avoid the use of water on non-productive land such as impermeable surfaces, rivers, and stream riparian strips.		CRC233091 cl. 12 CRC203646 cl. 11

11.2. Key Scheme Responsibilities:

Water Quality Monitoring	• Water quality monitoring at specified locations for specified parameters monthly; sample results by 30th May annually to ECan. Peer reviewed reporting & Remedial Action Plans required if parameters exceeded.		CRC233091 Cl.19-24.
FEP & FEP Audits	• Provide an FEP template for all shareholders that will detail the practices and procedures to be put in place to; manage the environmental effects arising from the use of water within an irrigated area; ensure compliance with consent conditions; and to minimise the potential adverse effects on the environment.	7.8	CRC181891 cl. 16 c.(iii)
	• Ensure that shareholders comply with their FEPs and FEP audits are carried out in line with consent conditions with resulting reports being supplied to Canterbury Regional Council and Otago Regional Council.	7.9(d)	CRC181891 cl. 16 d.
Fish Exclusion	• MDWRC currently has a rock bund at the intake of the Waitaki River (location: 1415542.57,5031808.78). This fish screen was installed in 2014 as part of the scheme intake upgrade. The MDWRC Board consider this fish screen to meet the necessary requirements, however the scheme is a member of the INZ Fish Screen Working Group and associated project, and if changes are needed to its screen as a result of project findings, then the scheme will plan for that accordingly.		CRC233091 cl. 18 CRC203646 cl. 5 CRC180534 cl. 5
Irrigation	• Ensure that backflow preventor certificates are supplied to Canterbury Regional Council annually for shareholders properties which utilise them.		CRC233091 cl. 11

	• All new irrigation infrastructure shall be designed and accredited by a qualified professional and installed in accordance with the accredited design.		CRC233091 cl. 16.
Nutrient Report	• Ensure that the measured input data for the period **1 July to 30 June**, is certified by a suitably qualified person and is provided to the Canterbury Regional Council by **30 September** each year. This information is to be maintained for the duration of the consent.		CRC233091 cl.13
SMP	• Ensure that this scheme Management Plan (including appendices and schedules) is kept up-to-date, and amendments of the document are supplied to the Canterbury Regional Council and Otago Regional Council.	7.9(a)	CRC233091 cl. 14
	An annual report on scheme compliance and performance shall be submitted to the Consent Authority by 30 September of each year.		CRC233091 cl.14e
Water Meters	• To obtain a certificate of compliance of the installation and operation of the water metering device within 1 month of installation and thereafter 5 yearly (or if replaced), and supply to Canterbury Regional Council and Otago Regional Council	8	CRC233091 cl. 9 CRC203646 cl. 8 RM13.046.01.V1 cl. 4
	• Install a data logger that will record the flow at least once every 60 seconds and have the capacity to store one season's data of water taken, i.e. for 1 July to 30 June. Daily telemetry to ECan is undertaken via Boramans		CRC233091 cl.7 & CRC203646 cl. 7 RM13.046.01V1 cl. 4
	• The scheme has contracted Rubicon Systems to record scheme usage by telemetry through their system and Boraman Consultants Limited (BCL) to provide annual reports on the water usage to Canterbury Regional Council and Otago Regional Council, on behalf of the scheme.		
	• The season's data for the period **1st July to 30th June** annual volume for CRC233091, CRC203646 and RM13.046.V1 must be submitted to ECan and ORC in a suitable format by **31st July**.		
Water Use	• To take all reasonable steps to maintain and comply with the Consents to take/use water.	6.1(a)	
	• All practicable steps must be taken to ensure that leakage from pipes and structures are avoided, including regular checks and maintenance of the irrigation infrastructure.		CRC233091 cl.12
WSA	• Ensure the consent holder enters into a WSA that contains the provisions stipulated in the consent. ECan is to be notified of any change of a party to a WSA.	5-8	CRC233091 cl. 17
Water Quality Monitoring	• Undertake Water quality monitoring as specified in conditions 19-24 of CRC233091. This applies to 3 groundwater sites and 2 surface water sites. Commission reporting if parameters exceeded, and prepare Remedial Action Plans if required		CRC233091 cl.19-24

12. REPORTING

12.1. Regular Scheme Management Reporting

Aqus is to provide a report at the scheduled board meetings. The report will cover all aspects of scheme management, with Environmental component noted below

This report may include, but not limited to:

- An update on any FEP Audits that have occurred and/or due to take place
- An update on any ECan or ORC reporting requirements that took place since last report and/or are scheduled to take place
- A summary of any compliance issues in the scheme that have occurred since last report
- Any other activities or issues to note

12.2. Annual ECan Reporting

An annual report on the MDWRC's compliance with resource consent CRC233091 for the season ending **30 June**, is to be prepared and submitted to ECan by **30 September** each year. The purpose of this document is to audit compliance with the scheme Management Plan and the scheme performance. MDWRC also hold take and use consents CRC180534 and CRC203646. These consents do not have a SMP component or an annual reporting requirement and are therefore not included in full in this report. However, MDWRC require all shareholders to implement GMP and abide by an overarching Water Supply Agreement. All shareholders are included in portions of this report where applicable.

The information to be included in the Annual Compliance report to ECan is as follows:

- A summary of the FEP audit results including:
  - Name of auditor(s)
  - Planned number of FEP audits vs completed audits
  - Audit results
  - Summary of reasons for C and D grades, if applicable
  - Actions taken to remedy C and D grades, if applicable
  - Summary of properties with repeated "C" or "D" grades, if applicable
  - The progress achieved for previously identified issues, if applicable
  - If relevant, a summary of audit observations/identified audit actions
- Any breaches in compliance including detailing any water that was withheld from shareholders during the previous season, if applicable
- A summary of any share transfers/sales/purchases for the previous 12-month period
- A summary of the nutrient losses reported by shareholders from the previous season, including some detail around any changes that might have occurred when compared to prior seasons. *(This report is prepared separately under condition 13, and may be submitted to ECan separately by Irricon)*
- A summary of each shareholder's irrigation usage during the previous season, including annual volumes. A summary of irrigation infrastructure (types/areas/evaluations) by shareholder, highlighting any new infrastructure since the last report (for those under CRC 233091)
- A summary of shareholders with effluent spread through irrigation mainline and dates of back flow prevention certification (for those under CRC233091 and CRC203646)
- A summary of fencing/planting of waterways within the irrigated area on shareholders property's (for those under CRC233091)
- Water quality monitoring results and response (if relevant)

12.3. Annual MDWRC Scheme Management Plan review

This annual review will look at the following:

- updating the SMP to reflect current management and information; and
- the effectiveness of the current objectives and policies in the SMP with meeting consent compliance and ensuring all shareholders are on a path to meeting GMP; and
- the effectiveness and implementation of the procedures set out in this document; and
- a review of resource consent conditions to ensure ongoing compliance

Recommendations for improvement (if any) of the SMP will be considered and approved at a MDWRC board meeting and noted to all shareholders (including verbal explanations for any fundamental changes) at the Annual General Meeting.

If revised, an updated version of the SMP shall be forwarded to ECan. A copy will be emailed to shareholders if significant changes are made.

13. FUTURE SCHEME PLANS

13.1. Spray to Border dyke Conversions

At the Company's AGM in December 2019, shareholders were reminded that the scheme's consent for border dyke irrigation expires in 2030. Given government's current focus on freshwater, including the efficiency of its use for irrigation purposes, it is probable that the renewal of this water take consent will be at risk if border dykes are still being used as a method of irrigation by shareholders. ECan will likely impose new provisions and rules in the terms of the consent and application rates which will likely only be achievable through spray irrigation. The expectation is that all shareholders using border dyke irrigation to convert to spray irrigation by the end of 2028.

The Company Constitution has clear guidelines under clause 3.7 (a) to (d) on how to seek approval from the Board for the conversion from border dyke to spray irrigation.

Schedule 1: Key Personnel

MDWRC Board of Directors
Kelvin Weir (Chair)
Russell Hurst
Michael Andrews
Grant Tremewan
Scheme Management Services
Aqus Limited
Operations Manager
Murray Turner, Waitaki Irrigation Management Ltd

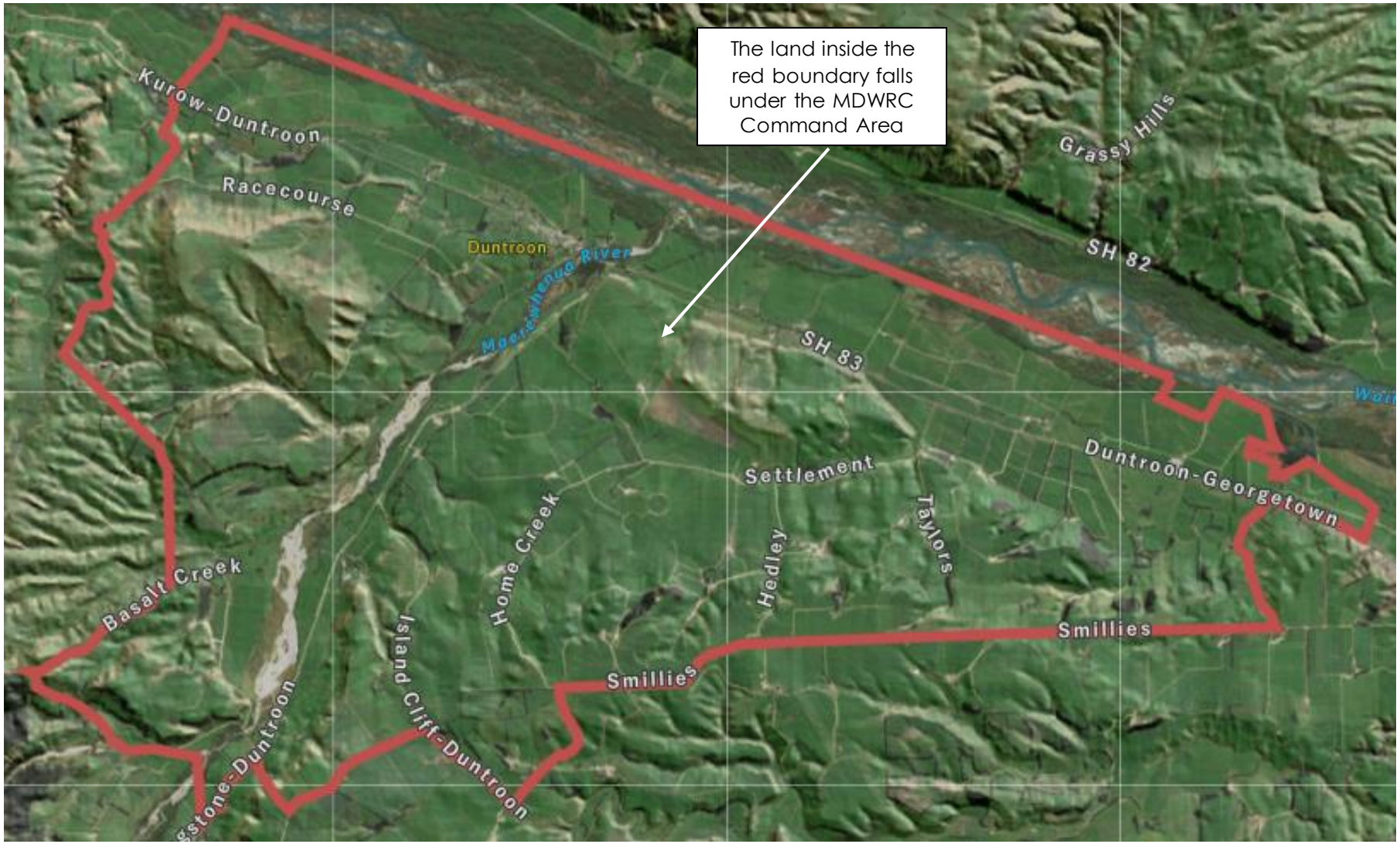
Schedule 2: Complete Shareholder List

Shareholder	Shares Held
See NZ Companies register for current information	
TOTAL OVERALL SCHEME SHARES	**2024**

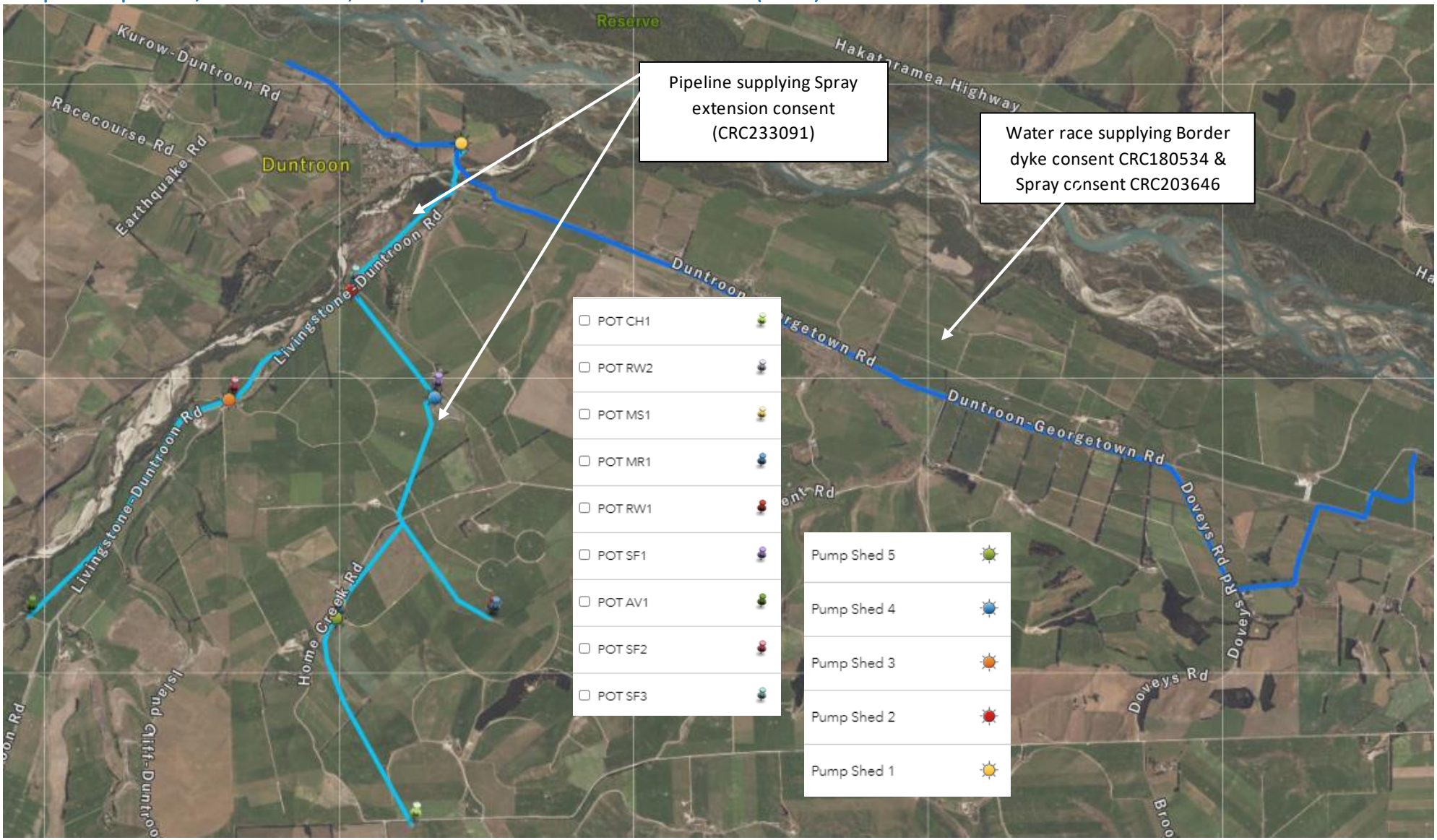
Note: One share is equivalent to irrigating one hectare at 0.5l/s via spray irrigation or one hectare at 500l/s via border dyke irrigation, depending on the infrastructure on each property.

Schedule 3: Scheme Maps

Map 1: Command Area

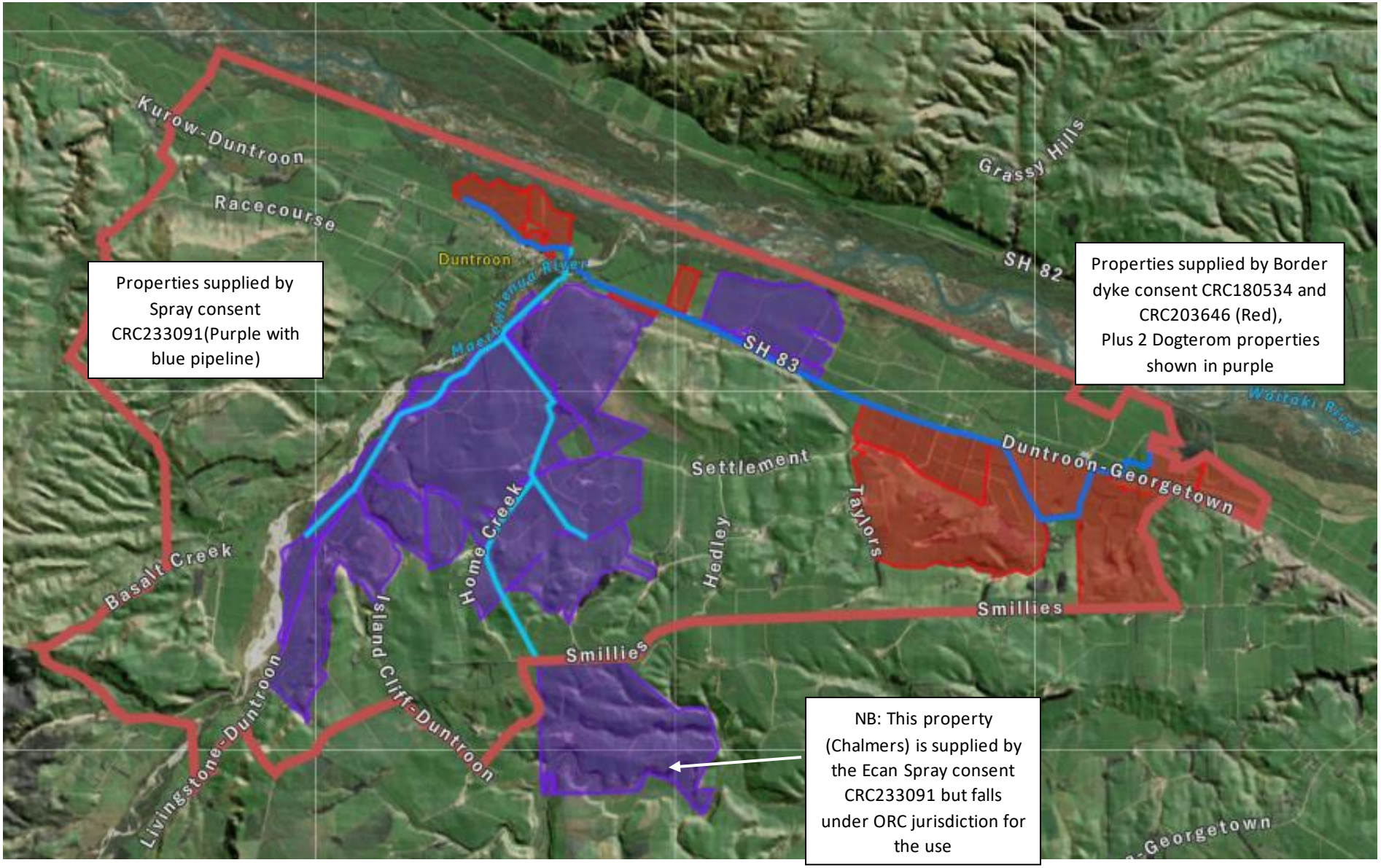


Map 2: Pipeline, Water race, Pump sheds and Points of Take (POT)

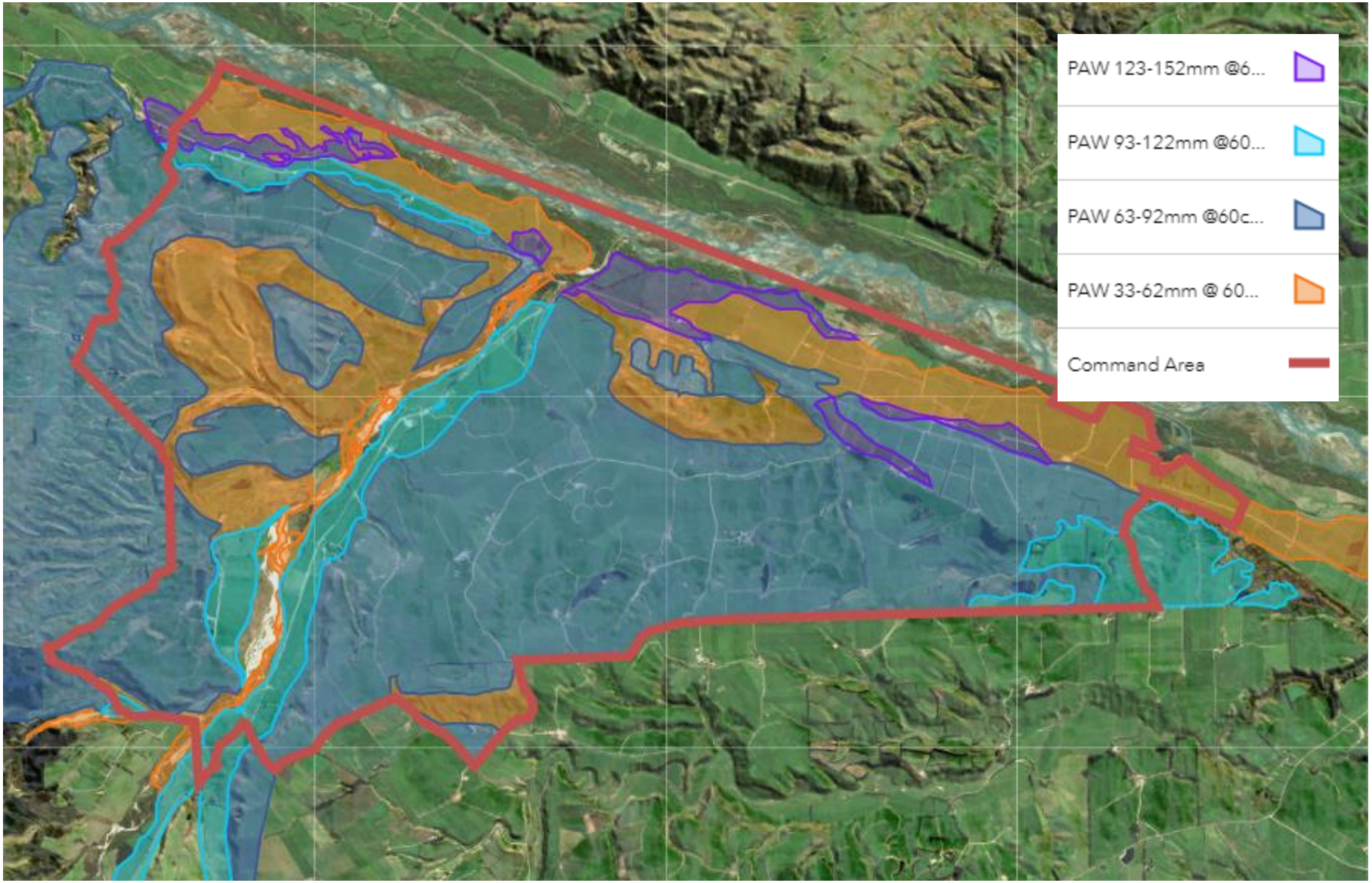


NB: The farms associated with each point of take on the above key are specified in Schedule 4: Shareholder Volumes.

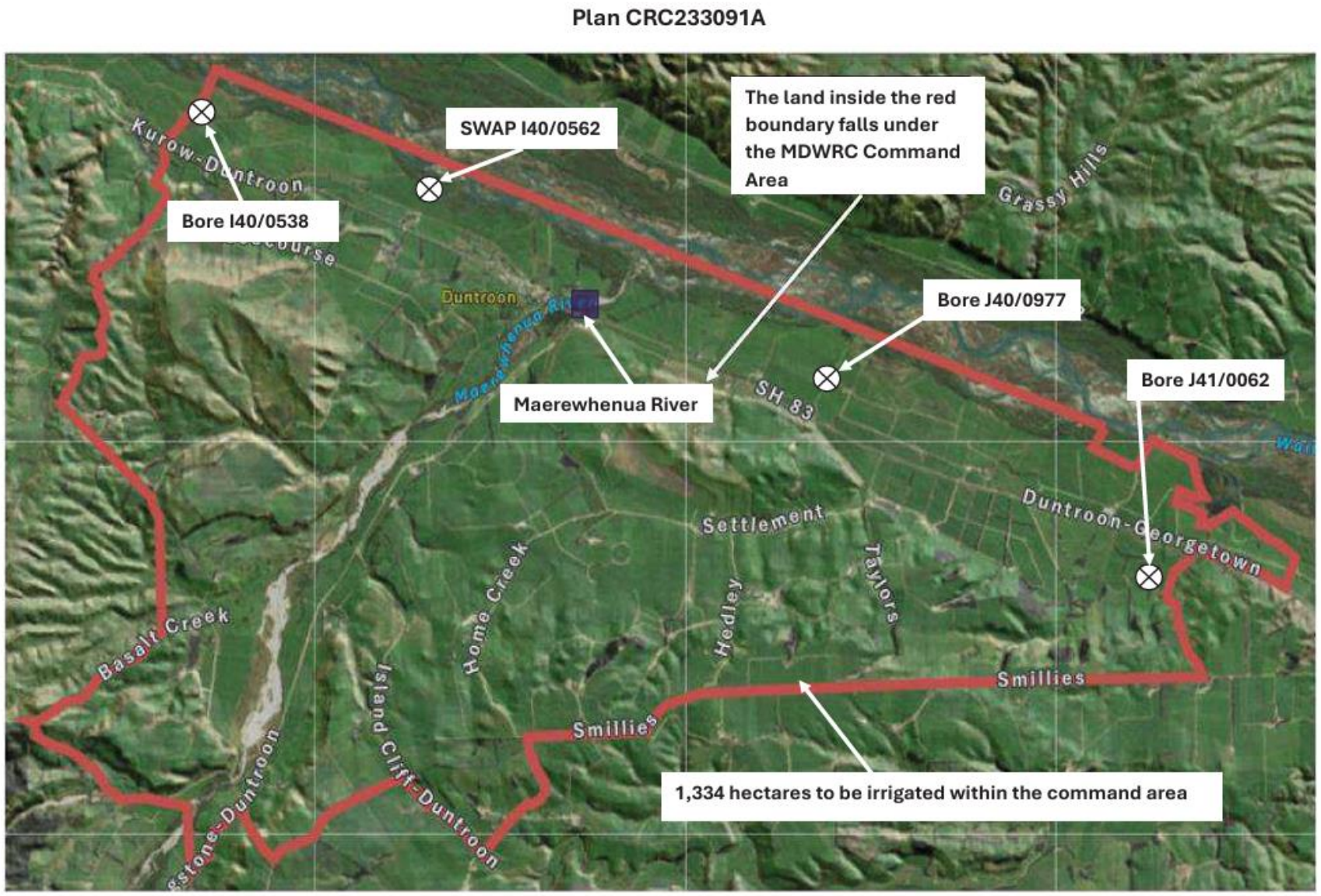
Map 3: Spray and border dyke consents by property



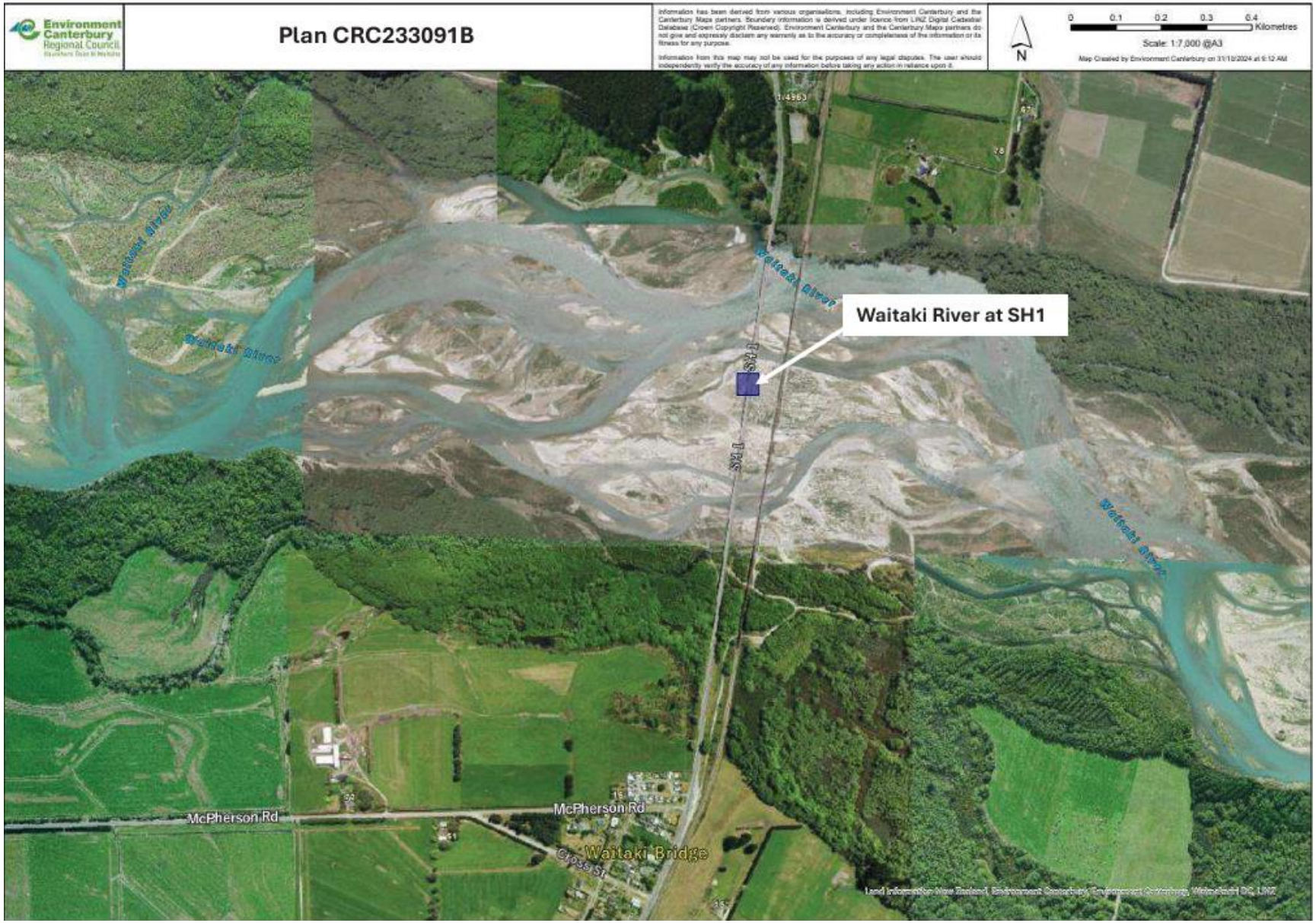
Map 4: PAW of soils at 60cm



Map 5a: Location of Water Quality Monitoring Points (A)



Map 5b: Location of Water Quality Monitoring Points (B)



Schedule 4: List of Appendices- *Electronic links*

Reference	Document/Link
Appendix 1a	Consent CRC180534
Appendix 1b	Consent CRC233091
Appendix 1c	Consent CRC203646
Appendix 2	Irrigation Design Code of Practice
Appendix 3	Irrigation Performance Assessment Code of Practice 2023
Appendix 4	Ecan Auditors information (including manual)

Schedule 5: Reporting Deadlines

Consent Condition	Affected Party	Details & Requirement	Frequency	Due date to MDWRC	Due date to ECan/ORC
Backflow Prevention	Any **Shareholder** who distributes effluent through their irrigation system	Effective backflow prevention must be installed and tested at the time of installation and annually thereafter by a suitably qualified person. A test report is to be provided to both the scheme and ECan.	Annually	Within two weeks of the inspection	Within two weeks of the inspection
Farm Environment Plans (FEPs)	All **Shareholders** with properties greater than 10 ha in the MDWRC Command Area (excluding those holding own FLUs with FEP & Audit Conditions)	FEPs are living documents and are to be updated in advance of an FEP Audit and/or if there have been any significant management changes such as new/changed irrigation, change of manager, change of effluent system etc.	As required	Within 60 days of a FEP Audit (Notice given of audits due in the upcoming season by 1st September)	Upon request
FEP Audits	All **Shareholders** holding FEPs (excluding those holding own FLUs with FEP & Audit Conditions)	FEPs are to be audited by an appropriately qualified person.	Dependent upon the grade received at the previous audit *(ORC Shareholders – annually)*	Final Audit Report will be provided by the Auditor following the required 10-day feedback period	Auditor to submit the Audit following the required 10-day feedback period
Irrigation Design Records	All **Shareholders** & The **Scheme**	New Irrigation systems are designed and installed in accordance with industry codes of practice and standards, take into account the specific requirements of the property's soil types, and comply with MDWRC resource consent conditions.	Any time new irrigation infrastructure is installed	Ongoing checks –New infrastructure reported through FEP Audit Process	Summary included in annual report (30th September) as required
OVERSEER ©Nutrient Budgets	All **Shareholders** under CRC233091	Nutrient budgets for the period 1 July to 30 June are to be prepared by a Certified Nutrient Management Advisor (CNMA) (submitted as part of the Annual Scheme Compliance & Nutrient Report)	Annually (for all Shareholders under CRC233091)	31st August	30th September
Scheme Management Plan	The **Scheme**	Updated versions to be submitted to ECan	With every version change	n/a	As required
Annual Compliance and Nutrient Report	The **Scheme**	Annual report on MDWRC compliance with CRC233091, and Nutrient Budget Summary report, including water use data for three consents	Annually	n/a	30th September
Water Quality Monitoring	The **Scheme**	Monthly groundwater & surface water quality results	Monthly sampling, Annual submission of results to ECan	n/a	30th May each year
		Monitoring response	If required	n/a	30th July
		Remedial Action Plan	If required	Includes updating of relevant FEPs, if requirements are identified	TBC
Water Meter Checks	The **Scheme**	Certificate of Compliance and Installation	At time of install and 5 yearly verifications	n/a	Within one month of installation/inspection
		Calibrations	Yearly flow gauging at Main intake; 5yrly at PS1 (due 2026)	n/a	Within one month of inspection

A. GLOSSARY OF TERMS

Word	Definition
2009-13 Nitrogen Baseline	(a) the discharge of nitrogen below the root zone, as modelled with OVERSEER® (where the required data is inputted into the model in accordance with OVERSEER® Best Practice Data Input Standards), or an equivalent model approved by the Chief Executive of ECan, averaged over the period of 01 July 2009 - 30 June 2013, and expressed in kg per hectare per annum, except in relation to Rules 5.46 and 5.62, where it is expressed as a total kg per annum from the identified area of land; and (b) in the case where a building consent and effluent discharge consent have been granted for a new or upgraded dairy milking shed in the period 01 July 2009 - 30 June 2013, the calculation under (a) will be on the basis that the dairy farming activity is operational; and (c) if OVERSEER® is updated, the most recent version is to be used to recalculate the nitrogen baseline using the same input data for the period 01 July 2009 – 30 June 2013.
ASM	Audited Self-Management.
CAR	Corrective Action Request - associated with the complaints register and non-compliance levels. Details around the corrective measures to be taken are to be provided to the Shareholder.
Command Area	The area indicated on the Scheme map (*refer Schedule 3*) in which water taken for irrigation may be used for the irrigation of crops and pastures.
Critical Source Area	Means a landscape feature such as a gully, swale, or depression that accumulates runoff from adjacent flats and slopes and delivers it to surface water body such as rivers and lakes, artificial waterways, and field tiles.
ECan	Environment Canterbury, also known as Canterbury Regional Council; The territorial authority for Canterbury
FEP	Farm Environment Plan.
FEP Implementer	An individual who makes day to day decisions related to the management of irrigation, fertiliser, soils, or effluent.
Good Management Practice (GMP)	As described in the Industry Agreed Good Management Practice Guide, Version 2 (September 2015) and subsequent variations.
Mahinga Kai	Literally means 'to work the food' and relates to the traditional value of food resources and their ecosystems, as well as the practices involved in producing, procuring, and protecting these resources.
MDWRC	Maerewhenua District Water Resource Company.
Natural Wetland	A natural wetland means a wetland (as defined in the Act) that is not— (a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former natural wetland); or (b) a geothermal wetland; or (c) any area of improved pasture that, at the commencement date, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain-derived water pooling.

ORC	Otago Regional Council; the territorial authority for Otago
Primary Organisation	A Primary Organisation is the organisation that the shareholder has confirmed, in writing, is responsible for managing their environmental processes including for example, updating the FEP for the shareholder property.
Property	Any contiguous area of land, including land separated by a road or river, held in one or more ownership, that is utilised as a single operating unit, and may include more than one certificate of title.
RAP	Remedial Action Plan- A plan developed by a suitably qualified person to identify mitigation measures, including timeframes, to alter/adapt land use practices to return any identified exceedance (i.e. water quality parameter) to within the specified level. Immediate and longer term actions are to be included.
River	The definition of river is given in the Resource Management Act as "a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal).
SMP	Scheme Management Plan – a living document that provides details of the practices and procedures to be put in place to operate the water take and delivery of water to the scheme area and to monitor and manage the environmental effects arising from the use of water within the scheme, in order to ensure compliance with the conditions of the consent and minimise the potential for adverse effects of the environment arising from the exercising of the scheme's resource consents.
Stock	As per Resource Management (Stock Exclusion) Regulations 2020, means beef cattle, dairy cattle, dairy support cattle, deer, or pigs.
SWAP	Surface Water Abstraction Point -number allocated via ECan consent process to identify location of water abstraction & associated water meter
Technically efficient use of water	Using water in a way that any given output is produced at least cost, including avoiding waste
Tuhituhi Nehera	Māori rock art
Wahi Taonga	Places of sacred or extreme importance to Māori
WSA	The Water Supply Agreement allows the scheme to restrict or cease the supply of water to irrigators, where irrigators are shown to have breached compliance under Resource Consent CRC233091, CRC203646 or their FEP.
Wide River	As per Resource Management (Stock Exclusion) Regulations 2020, means a river (as defined in the Act) with a bed that is wider than 1 metre anywhere in a land parcel.