PO Box 9424
Tower Junction
CHRISTCHURCH 8149
Ph: 03 982 4267
www.cpwl.co.nz

31/08/2019

ATT: Jana Hayes
Environment Canterbury
PO Box 345
CHRISTCHURCH 8140

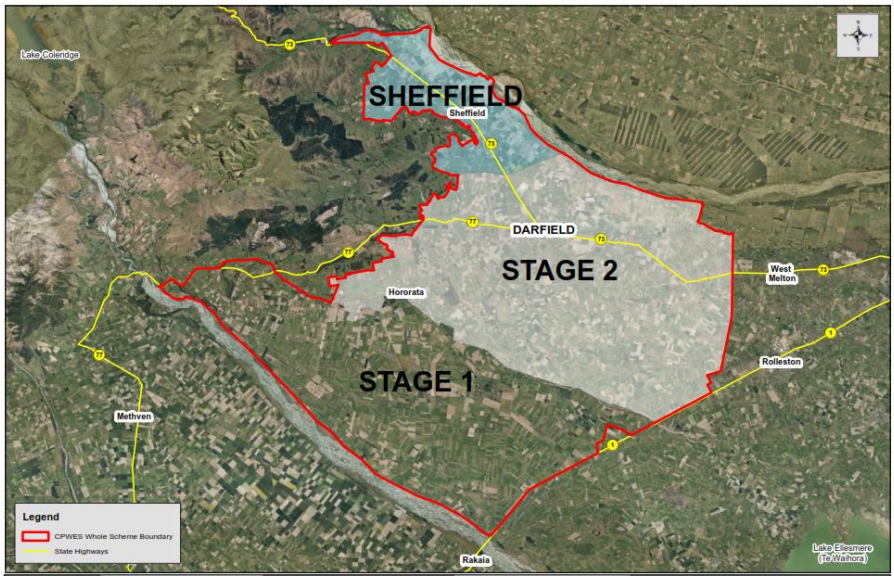
Via email: mailroom@ecan.govt.nz

Dear Jana,

ANNUAL COMPLIANCE REPORT – CENTRAL PLAINS WATER LIMITED

Please find enclosed Central Plains Water Limited's (CPWL's) third Annual Compliance Report covering the annual compliance requirements for CPWL's take and use surface water (CRC165680) and discharge of nitrogen to land (CRC165686) resource consents. This report covers Stage 1's fourth irrigation season and Sheffield's second irrigation season which operated from 1st September 2018 through to 29th April 2019. Stage 2 operated for its first year with the first customer delivered water on 2nd October 2018 and the last to come on to the scheme on 15th October 2018.

Figure 1. Central Plains Water Limited Scheme Overview



Yours sincerely

Fiona Crombie
Environmental Group Manager
CENTRAL PLAINS WATER LIMITED

Original Published 31st August 2019.

Table of Contents

Consent Number:	CRC165680
Location	Rakaia River, CANTERBURY PLAINS
Description:	to take and use surface water
Commencement Date:	6 April 2016
Expiry Date:	25 July 2047

Conditions and Compliance

1.0 CRC165680 to take and use surface water

Water Use Requirements

4. The consent holder shall measure leakage from pipes and structures forming part of the reticulation system that delivers water from the Waimakariri and Rakaia Rivers to the farm supply points for comparison with the target of on average not more than 20% of water taken being lost by leakage from the total reticulation system between 1 September and the following 30 April.

Stage 1

CPWL's use consent and conditions were granted based on an open race (unlined) distribution or piped network which included by-wash discharge points. This system was estimated to lose 20% via race seepage and by-wash.

A significant change to the CPWL infrastructure was the decision to construct a fully piped distribution network and predominantly lined headrace. As this condition has been included in the consent for an infrastructure system specified in the application for consent that is significantly different from the system CPWL has constructed, that mitigates leakage and the actual losses are so low that that they are not measurable this consent condition is now not applicable.

Sheffield

Sheffield has an open water race between Pump Station (PS) 6.1 and the Waimakariri Divide that is approximately 1900m long. Pumping ceased for the season on 29th March 2019. Table 1 shows a loss of between 2 and 7%.

Table 1. Sheffield Water Race Losses

	29/01/2019 0810-0911hrs	25/02/2019 1212-1313hrs
River take (L/s)	2000	1265
Less supply to Wright Co.	19	48
Theoretical flow to pond (L/s)	1981	1217
Measured flow rate (L/s)	1942	1133
Losses (L/s)	39	84
Losses (%)	2%	7%

6 Water Application Rates

a) The maximum application rate shall not exceed 5.18 millimetres per day on a scheme-wide basis, provided that if this application rate is shown to result in a particular property exceeding field capacity then the consent holder shall ensure that the application rate is reduced accordingly.

The average scheme-wide application rate for the 2018 - 2019 irrigation season was 1.30 mm/day. The scheme wide average will have been impacted by Stage 2 not starting up until the end of October.

No property exceeded 5.18mm/day in this season, this includes, where relevant, their combined CPWL and Groundwater take (**Figure 2**). Some of the groundwater taken was used for purposes other than irrigation, e.g. stock water, dairy shed washdown or domestic use, therefore the results in **Figure 2** are considered conservative. The maximum application rate for any shareholder was 4.72mm/ha.

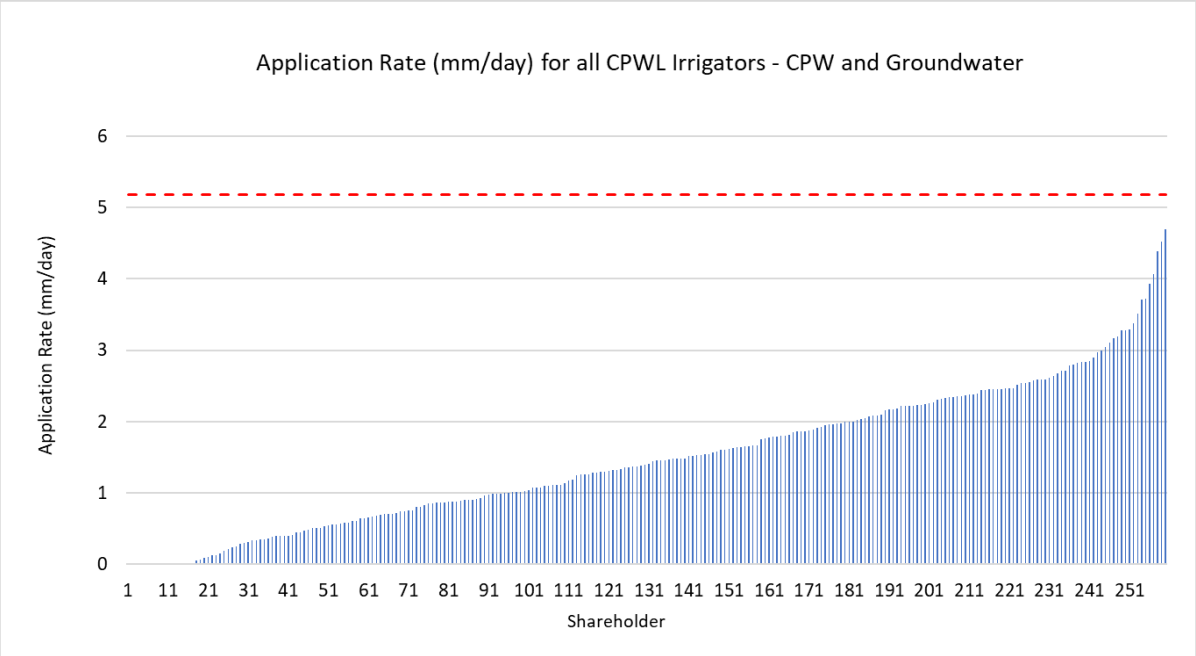


Figure 2. Combined Groundwater and CPWL application rate (mm/day) for Stage 1 CPWL irrigators. The green bar indicates the scheme wide average application rate of 2.42 mm/day.

b) In the event that water authorised for use under this consent is applied to land concurrently with water abstracted from groundwater, the combined volume of water used on that land shall not exceed:

i) 6,250 cubic metres per hectare between the 1st July and the following 30th June; or

ii) The volume authorised on a groundwater irrigation permit if that volume is greater than 6,250 cubic metres per hectare between 1 July and the following 30 June, should the shareholder possess a groundwater permit authorizing irrigation of the same area of land.

In the 2018-2019 irrigation season two shareholders exceeded the 6,250m^3/ha annual limit for groundwater volume, as shown in **Figure 3**.

- The largest groundwater application volume on the graph appears to be related to an issue with the flow meter as the take is a magnitude greater than previous years, however, this has not been followed up as it has been confirmed with the shareholder that the consent has been surrendered. This is also the status of the consent on the Environment Canterbury website.
- One did not exceed the volume authorised on their groundwater irrigation consent.

The groundwater users combined CPWL and groundwater average application volume was 3,123m^3/ha for those that utilised both Groundwater and CPWL water. 1,161 m3/ha average from groundwater and 1,978 m3/ha of CPWL water.

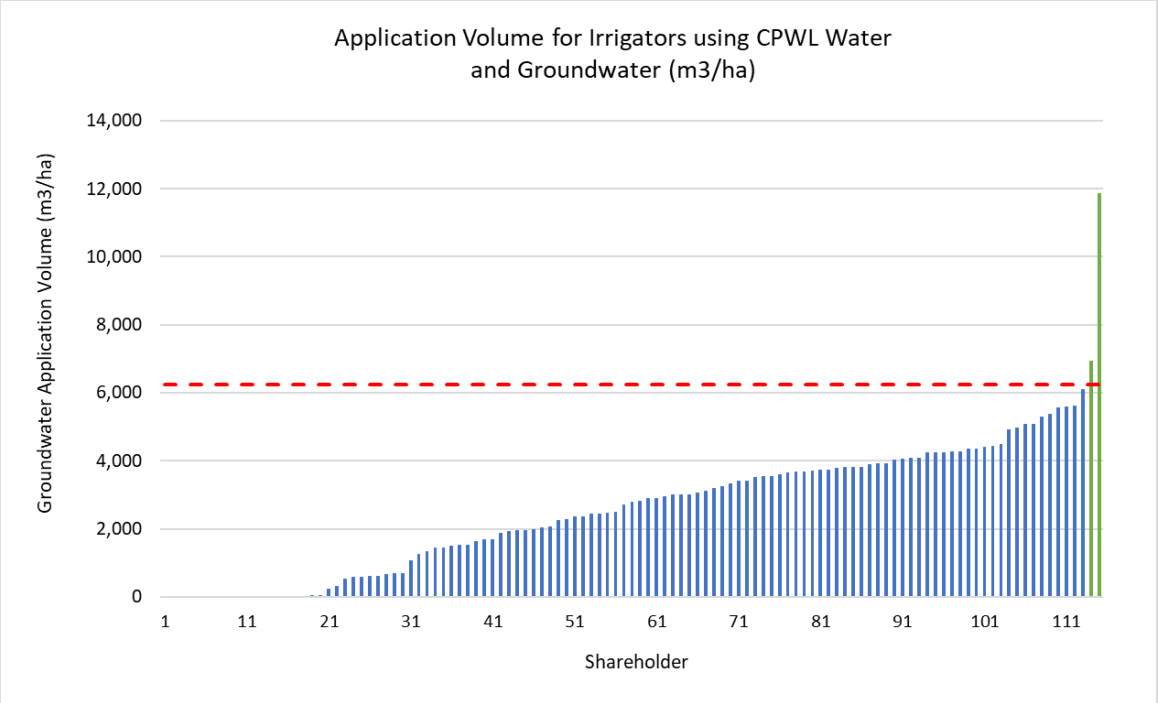


Figure 3. CPWL water and groundwater application volume for groundwater users. The dashed red line indicates the volume of 6,250m3.

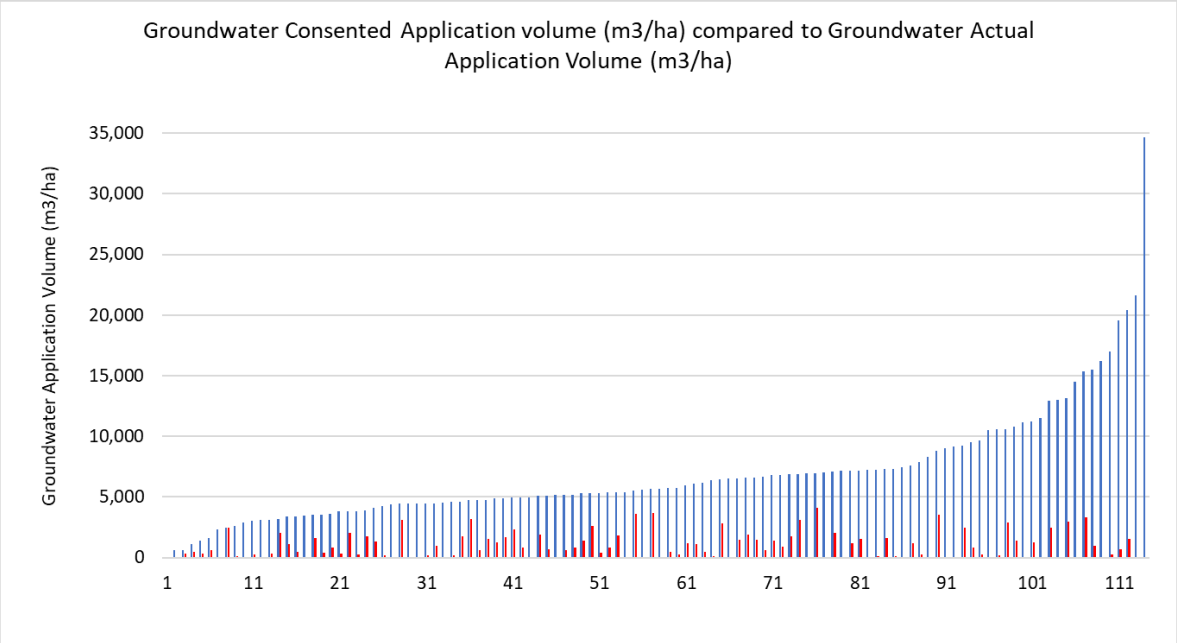


Figure 4. Volume of groundwater used compared to their annual consented volume. Entry number 9, where the actual and consented application rate are similar, is a consent holder that has issues with their flow meter, these are not resolved the telemetry company is trying to resolve them.

Consent Number:	CRC165686
Location	Rakaia River, Selwyn
Description:	To discharge of nitrogen to land
Commencement Date:	6 April 2016
Expiry Date:	25 July 2047

Conditions and Compliance

2.0 CRC165686 to discharge of nitrogen to land

16 Where stock are wintered on properties outside of those specified in condition 1 but still within the Waihora/Ellesmere Zone area or the Christchurch – West Melton Zone area (as defined in Figure 1 of the Canterbury Water Management Strategy Strategic Framework November 2009), then the consent holder shall obtain, from people using irrigation water under CRC165680, or any subsequent replacements or variations thereof, an undertaking that the stock will only be wintered on a property that has a Farm Environment Plan.

This is covered in the CPWL Water Use Agreement that each construction shareholder is required to sign up to prior to being delivered water. It is also asked and documented during an FEP audit.

18 The consent holder shall:

a) Prepare an annual report which includes:

i) Actual land areas using water under CRC165680 or any subsequent replacement or variation thereof;

The total land area managed under CPWL for 2018-2019 Irrigation Season was approximately 70,000 hectares including Farm Enterprise properties. Stage 1 covers approximately 31,000 hectares that includes CPWL irrigated land and Farm Enterprise land (**Figure 5**). Approximately 22,800 hectares of this area nominated was irrigated with CPWL water.

Stage 2 the total land area managed was 32,000 hectares including Farm Enterprise properties and in Sheffield approximately 7,200 hectares including Farm Enterprise properties (**Figure 6**) was managed by CPWL. The total irrigated area by CPWL water in Sheffield was approximately 4,600 hectares.

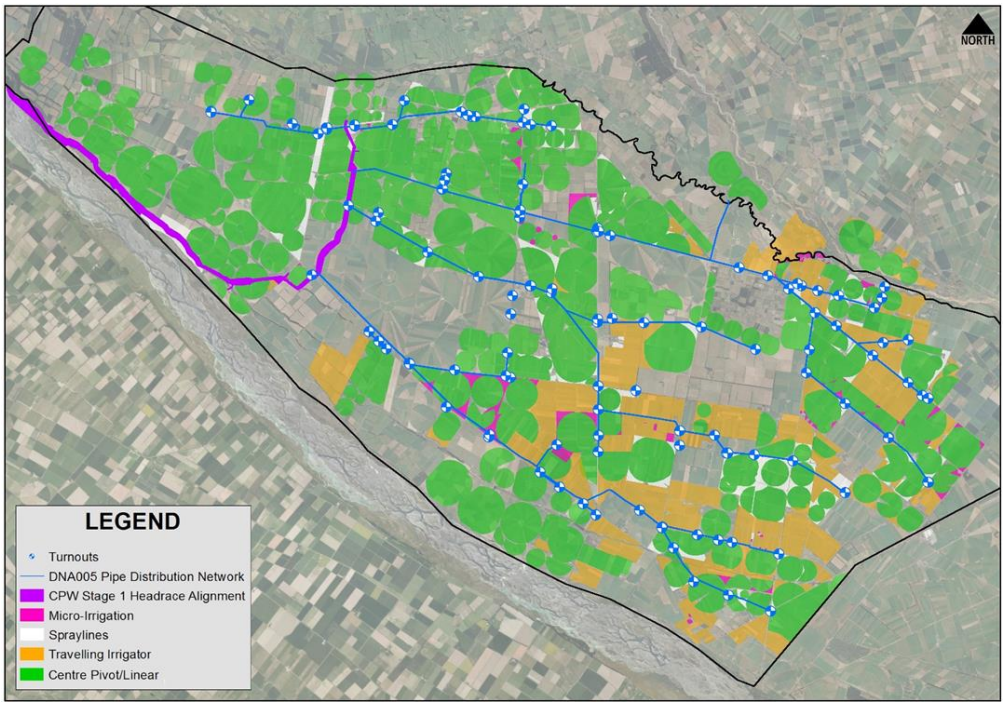


Figure 5. CPWL Stage 1 shareholder type of irrigation.

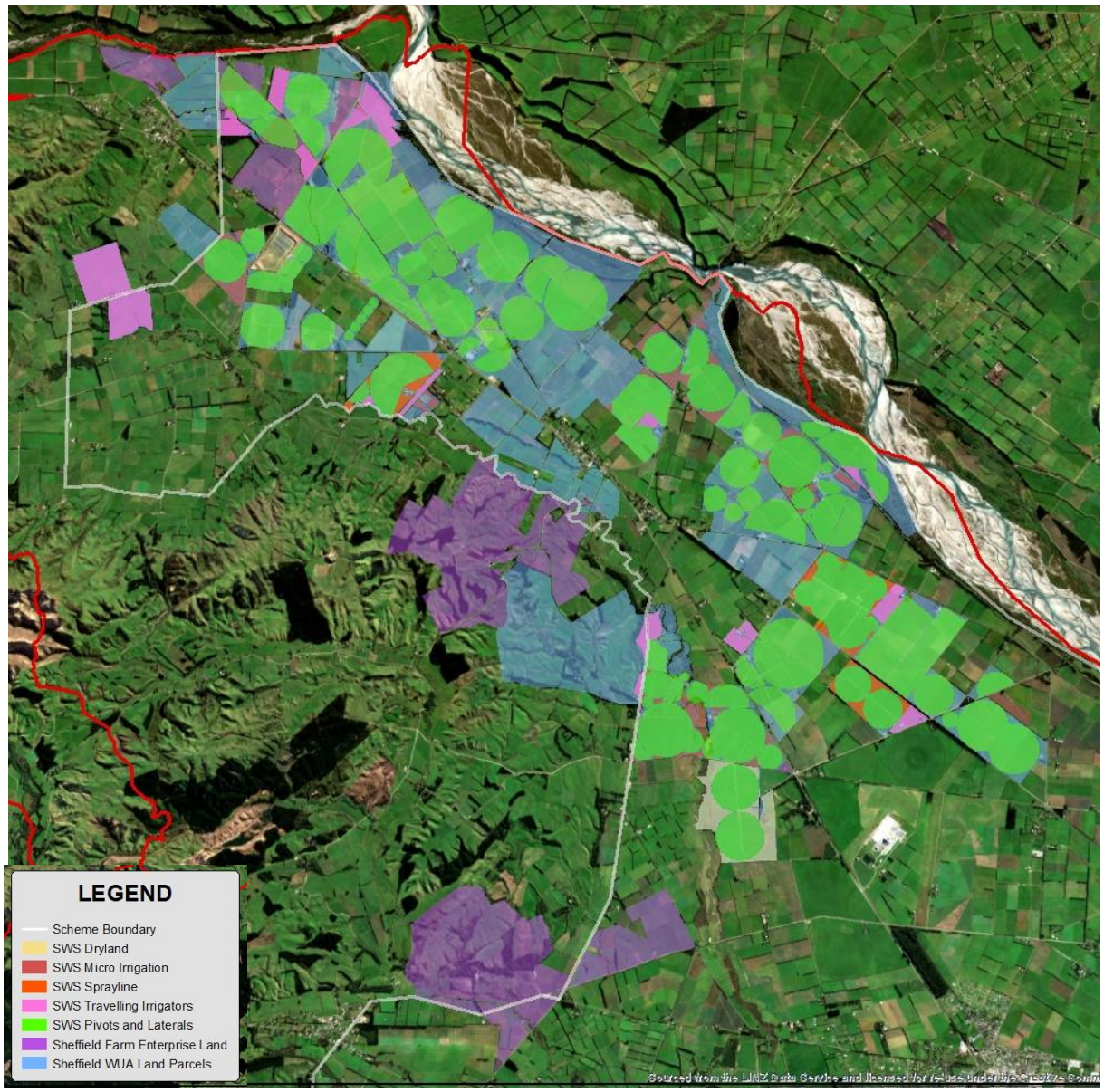


Figure 6. CPWL Sheffield Shareholder type of irrigation.

ii) A list of users of water under CRC165680, or any subsequent replacements or variations thereof;

Appendix 1 **Schedule CRC165686** lists the Shareholders using CPWL Water during the 2018-2019 irrigation season. This list also includes their additional properties that fall under their Farm Enterprise - Category C of Condition 1(a(ii) - any other properties within the area identified on Plan CRC165686A which forms part of this consent, that are included in and covered by a Farm Environment Plan (FEP) that has been prepared for one of the properties.

iii) Volume of water supplied to each property specified in Condition 1(a)(i);

The volume of water supplied by CPWL to each shareholder in the 2018-2019 irrigation season is available in Appendix 1 **Schedule CRC165686**.

For the 2018-2019 irrigation season 103,727,372m3 of water was delivered to shareholders in the CPWL Scheme. Stage 1 utilised 63,554,327m3, Stage 2 31,904,069m3 and Sheffield 8,268,977m3 of

low nutrient, alpine water. Stage 1 had its lowest use of water over the four years of it operating (**Figure *7***).

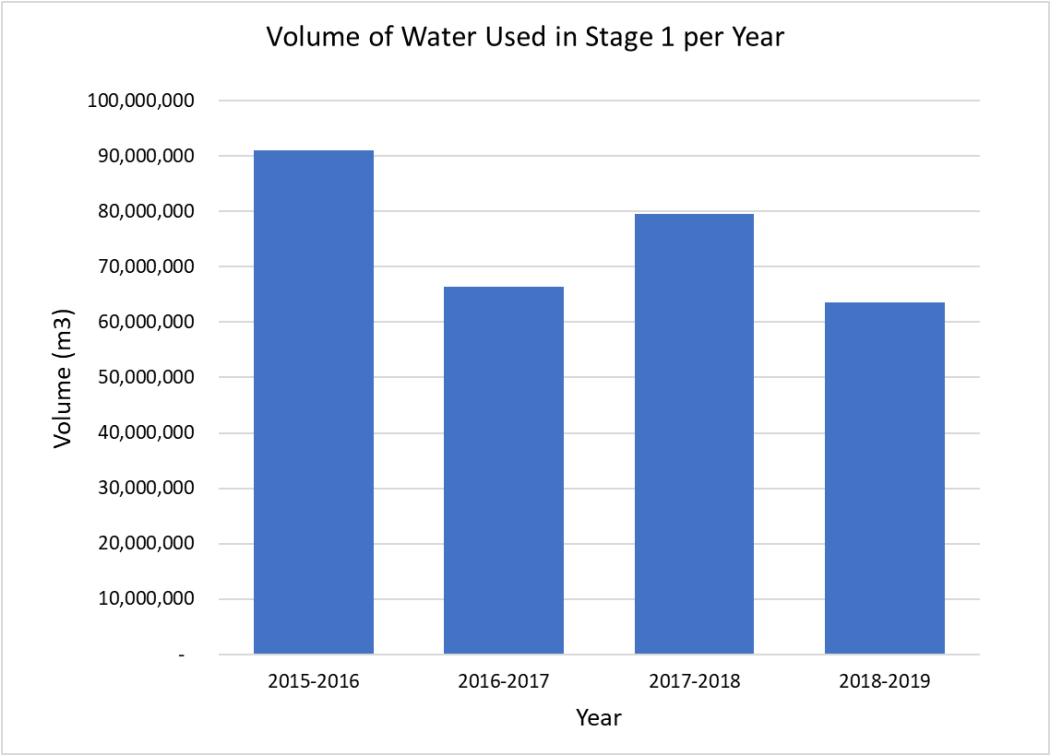


Figure 7. Volume of water use per year in Stage 1 of CPWL that has been operating for four years.

iv) Land uses for each property specified in condition 1(a)(i);

Appendix 1 Schedule CRC165686 details the land use for each property based on categories defined in OVERSEER® nutrient budgets. ***Figure 8*** shows the percentage of each land represented.

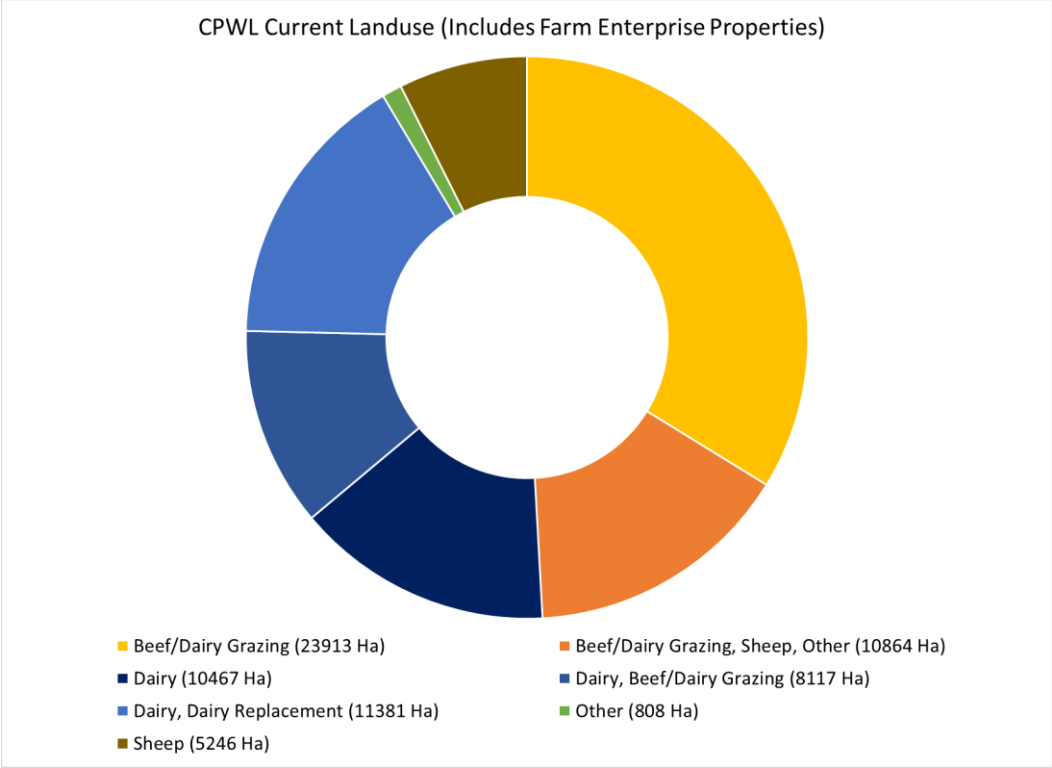
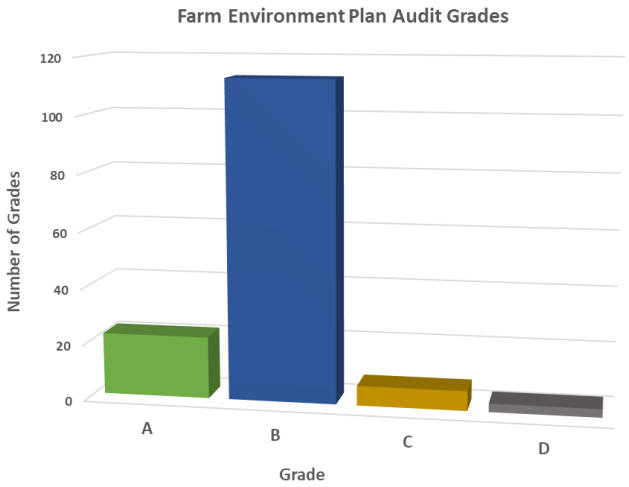


Figure 8. CPWL current land uses for the scheme based on the land use specified in their nutrient budget. This includes Farm Enterprise land, parcels of land that are run with a land parcel that is irrigated by CPWL.

v) A summary of the FEP audit grades assigned in accordance with condition 13 and Appendix CRC165686 within the last 12 months;

145 Farm Environment Plan Audits were conducted with 93% receiving either an A or B grade (***Figure 9***). There were 11 properties in Stage 1 that were audited, this was due to receiving a C grade last year, new ownership or farm manager or the property was new to the scheme.



	Grade A	Grade B	Grade C	Grade D
Total	22	113	7	3

Figure 9. 2018-2019 Irrigation Season FEP audit grades.

vi) A summary of the reasons for properties receiving a C or D grade;

Seven properties received C grades, all were received in their first year of being audited. Two of the seven properties received a C grade due to not meeting their effluent management objectives and would have received a B grade if they had met the effluent management objective (condition 15 of CRC165686). Three properties received a C grade due to lack of records, one due to lack of a nutrient budget and the location of the offal pit and the last was due to new irrigation infrastructure being installed and improvement required on how it is managed.

Three D grades were received, two in their first year of being audited and one in their third year of being audited. The previous years the property that is in their third year of being audited received a B grade in their 2016/2017 audit and C grade in their 2017/2018 audit. However, in 2017/2018 the property would have received a B grade if it had met the effluent management objective therefore condition 15 of our discharge consent does not apply. If the property had met the effluent management objectives in 2018/2019 the property would have received a C grade.

Appendix 2 outlines the management objectives these properties need improvement on and the auditor's reason for the grade.

vii) A Summary of actions taken to address C or D grades;

For two of the properties that received a D grade CPWL has had a farm consultant visit and develop a strategy with the owner / operators of the property to get the property to above good management.

Appendix 2 details the summary of actions that CPWL will work with the shareholders that received a C or D to achieve. CPWL will assist them in working through the summary of actions highlighted in the Farm Environment Plan Audit and the individual comments received from the auditor.

viii) A list of properties that have been assigned 3 or more C or D grades within the last five years;

No property has received 3 or more C or D grades within the last five years.

ix) The progress achieved for previously identified issues, if applicable;

Instead of focussing on the OVERSEERFM© results, CPWL is encouraging shareholders to focus on improving farm practices between now and 2022. With a starting focus on:

- Irrigating only when needed.
- Implementing soil moisture monitors, flow meters and using weather forecasting.
- Making sure each irrigation systems are working properly, through providing resources to ensure the owners/managers can undertake testing of their irrigation infrastructure and understand what the results mean.
- Ensuring pre-season inspections are undertaken. Irrigation infrastructure is regularly inspected, maintained and calibrated.
- Ensure effluent is stored, managed and applied properly and that there are plans in place in an emergency.

CPWL has also been involved in a Virtual Field Trip that was used to educate primary schools through Irrigation New Zealand.

Where required assisting the farmer with an initial consultation with a farm consultant to assist them in their FEP audit actions.

With the Beef and Lamb template and Federated Farmers template now not being schedule 7 approved, CPWL is updating shareholders to a new approved template.

Although not required under our consent CPWL is rolling out including Mahinga Kai in all FEP's for its shareholders.

x) The sum of the annual amount of nitrogen that is lost to water from properties listed in Schedule CRC165686 Groups A and B; and

For 2018-2019 irrigation season the amount of nitrogen lost to water from properties in groups A and B was 3,656 tonne.

CPWL is still working through the 2017NDA nutrient budgets and checking them for if they meet Little Good Management Practice and then working with the shareholders consultant to update the nutrient budget. Stage 1 nutrient budgets that were completed back in 2014 are being updated first as Stage 2 were mostly completed during what Little Good Management was or post it being adopted.

Appendix 1 Schedule CRC165686 shows that there are nutrient budgets that have not been submitted for various reasons such as the nutrient budget is with Overseer to resolve an issue, the nutrient budget hectares did not match up to the FEP hectares, the nutrient budget was not at little good management or there have been issues in accessing the OverseerFM account by the owner and consultant.

There is a large backlog with the consultants currently with waitlists out until January now and the update to OverseerFM only occurring two months ago this has created issues with the nutrient budget not running in the latest version and access to accounts. The reviewing of nutrient budgets to meet Little Good Management by consultants is also creating a greater workload.

xi) The annual amount of nitrogen loss to water for each property listed in Schedule CRC165686 Groups B and C, as calculated in Accordance with Appendix CRC165686;

For 2018-2019 irrigation season the amount of nitrogen lost to water from properties in group B and C was 907 tonne.

APPENDIX 1

Schedule CRC165686

		SCHEDULE CRC165686							
	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2018/2019	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2018-2019 Irrigation Season (m3)
1	R601756153	18	A		Horticulture, Other Grazing	Horticulture, Other Grazing	New Irrigator		5,363
2	R002069172	326	A	A	Sheep	Sheep, Beef/Dairy Grazing, Arable	New Irrigator	23,775	393,100
3	R601677521	134	A	B	Sheep, Beef/dairy grazing	Beef/dairy grazing	New Irrigator	35,194	665,553
4	R601677521	193	A	B	Sheep, Beef/dairy grazing	Dairy	Existing Irrigator		40,128
5	R601771233	300	A	B	Sheep, Beef/dairy grazing	Sheep, Beef/Dairy grazing, Arable	New Irrigator	14,178	153,676
6	R601724928	115	A	B	Sheep, Beef/dairy grazing	Dairy	Mixed	7,846	300,837
7	R601292386	197	A	B	Sheep	Sheep, Beef/Dairy Grazing, Arable	New Irrigator	12,830	305,943
8	R002067242	305	A	B	Sheep, Beef/dairy grazing	Sheep, Beef/Dairy Grazing, Arable	New Irrigator	6,928	263,238
9	R002069989	171	A & C	B	Sheep, Beef/dairy grazing	Beef/dairy grazing	New Irrigator	7,259	138,859
10	R601730375	511	A	B	Beef/dairy grazing	Sheep, Beef/Dairy grazing, Arable	New Irrigator	11,915	96,054
11	331020681	59	A		Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator		118501
12	R601730391	20	A	A	Sheep	Beef/dairy grazing	New Irrigator	1,144	30,588
13	R002066947	275	A	A	Sheep, Beef/dairy grazing	Sheep, Beef/dairy grazing, Arable	New Irrigator	18,100	370,336
14	R600507664	53	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing, Arable	Existing Irrigator		0
15	R601665832	140	A	A	Sheep	Beef/dairy grazing	New Irrigator	6,697	204,896
16	R600236385	219	A	B	Dairy, Dairy Replacements	Dairy, Dairy Replacements	Existing Irrigator	19,571	538,709
17	R600236385	277	A	B	Dairy, Dairy Replacements	Dairy, Dairy Replacements	Existing Irrigator	21,620	916,792
18	R600236385	79	C	B	Dairy	Dairy	Existing Irrigator	11,662	0
19	R601100282	108	A	LWP	Dairy, Beef/dairy grazing	Dairy, Dairy Replacements, Beef/dairy Grazing	Existing Irrigator	9,344	343,123
20	R601743728	324	A	B	Dairy	Dairy, Dairy Replacements	Existing Irrigator	43,587	431,617
21	R002069351	198	A		Sheep, Beef/dairy grazing	Beef/dairy grazing	New Irrigator		3,373
22	R600941402	444	A & C	B	Beef/Dairy Grazing	Beef/Dairy Grazing, Arable	New Irrigator	16,118	292,336
23	R002069318	169	A	B	Sheep, Beef/dairy grazing	Sheep, Beef/dairy grazing, Arable	New Irrigator	14,191	221,736
24	R600507664	25	A		Sheep, Beef/Dairy Grazing, Arable	Sheep, Beef/Dairy Grazing, Arable	New Irrigator		64,595
25	R002061384	226	A	B	Sheep, Beef/dairy grazing	Sheep, Arable	New Irrigator	13,489	336,830
26	R601730341	47	A	A	Beef/dairy grazing	Beef/dairy grazing	New Irrigator	16,295	83,156
27	R601730359	69	A & C		Sheep	Sheep, Arable	New Irrigator		0
28	R601730341	417	C		Sheep, Beef/dairy grazing	Sheep, Beef/Dairy Grazing, Arable	Dryland		0
29	R601809834	192	A	B	Sheep, Beef/dairy grazing	Beef/Dairy Grazing	New Irrigator	16,964	214,200
30	R601423367	226	C	B	Sheep, Other	Sheep, Other	Dryland	20,061	0
31	R601423367	190	A		Dairy	Dairy, Dairy Replacements	New Irrigator		400,633
32	R000398501	360	A	B	Sheep, Beef/dairy grazing	Sheep, Beef/Dairy Grazing	Existing Irrigator	33,909	777,965
33	R600903217	112	A	B	Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	8,692	
34	R002067226	682	A	B	Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing, Arable	Mixed	47,973	449,000

	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2018/2019	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2018-2019 Irrigation Season (m3)
35	R002066157	164	A	A	Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	7242	363161
36	R002067021	241	A	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep, Arable	Mixed	18960	259070
37	R002067021	118	A		Beef/Dairy Grazing	Beef/Dairy Grazing, Sheep	Existing Irrigator		
38	R002334143	39	A		Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator		25858
39	R602067408	93	C	B	Sheep	Beef/Dairy Grazing	Existing Irrigator	6535	0
40	R601768356	184	A	B	Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	17033	606701
41	R002071886	24	A	B	Arable	Dairy	New Irrigator	2774	74032
42	R601887410	213	A	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	11,166	195001
43	R601792851	221	A & C	B	Dairy	Dairy, Dairy Replacement	Existing Irrigator	13,881	128855
44	R601447185	561	A & C	A	Sheep	Beef/Dairy Grazing, Sheep, Arable	Mixed	19,852	500250
45	R601809818	254	A	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Mixed		74246
46	R000192796	343	A	B	Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	19,734	840567
47	R002070600	262	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	9,479	305609
48	R601844036	180	A	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	11,692	183266
49	R000191113	201	C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	Dryland	4,990	N/A
50	R000191113	272	C		Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	Dryland	5,122	N/A
51	R000191113	192	A & C		Beef/Dairy Grazing, Sheep, Other	Beef/Dairy Grazing, Sheep	New Irrigator	13,002	227525
52	R600886771	389	A	B	Sheep	Beef/Dairy Grazing	Existing Irrigator	15581	973710
53	R600886771	223	C	A	Dairy	Dairy	Existing Irrigator	29867	N/A
54	R601929970	104	A & C	B	Beef/Dairy Grazing	Beef/Dairy Grazing, Sheep	Existing Irrigator	3587	96611
55	R602266125	320	A & C	B	Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	25,445	59442
56	R601797135	471	A	B	Beef/Dairy Grazing, Sheep, Trees and Scrub	Dairy, Beef/Dairy Grazing	New Irrigator	43,011	1015890
57	R002070189	81	A		Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep, Arable	New Irrigator		135872
58	R001836188	321	A	B	Sheep	Sheep	New Irrigator	8912	512955
59	R002066441	83	A	B	Beef/Dairy Grazing	Beef/dairy grazing	New Irrigator	2665	155944
60	330749091	543	A & C	A	Arable, Beef/Dairy Grazing, Sheep, Other	Beef/Dairy Grazing, Sheep, Horses	New Irrigator	29531	84991
61	R002070511	30	A	B	Sheep, Arable	Sheep, Arable	New Irrigator	1559	53397
62	R601372690	140	A	B	Sheep, Arable	Sheep, Arable	Mixed	4155	27275
63	R601700018	690	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	26321	193030
64	R601771241	223	A & C	B	Beef/Dairy Grazing, Sheep, Deer	Beef/Dairy Grazing, Sheep, Arable	Existing Irrigator	4816	89264
65	R601771241	41	C		Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep, Arable	Dryland		N/A
66	R601771241	22	C		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Dryland		N/A
67	R601236052	521	A	B	Beef/Dairy Grazing	Beef/Dairy Grazing, Sheep	New Irrigator	19589	152225
68	R601410656	280	A	A	Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	19980	872183
69	R602199631	227	A & C	B	Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	23999	239126
70	R602199631	228	C	LWP	Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	26960	N/A
71	R002065436	197	A	B	Sheep	Beef/Dairy Grazing	New Irrigator	17721	405079
72	R602156851	346	A	A	Beef/Dairy Grazing, Sheep, Arable, Deer	Beef/Dairy Grazing, Sheep, Arable	Mixed	19415	199917
73	R000187680	129	A	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	With Overseer	190332
74	R601674823	32	A		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	With owner for approval	11400

	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2018/2019	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2018-2019 Irrigation Season (m3)
75	R600977881	81	A	B	Sheep	Sheep	New Irrigator	1505	14768
76	R601810883, R601810875	131	A	C	Sheep	Beef/Dairy Grazing	New Irrigator	8588	65556
77	R600756371	104	A & C	B	Trees	Beef/Dairy Grazing, Sheep	New Irrigator	13942	125925
78	R600756371	50	C		Sheep, Deer	Sheep, Deer	New Irrigator		26272
79	R600756371	45	C		Deer	Deer	Dryland		N/A
80	R601705010	0	A & C	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Mixed	With consultant	63161
81	R000193823	780	A & C	B	Sheep	Sheep	New Irrigator	32854	294464
82	R601758571	318	A & C	B	Dairy	Dairy, Dairy Replacement	Existing Irrigator	With consultant	328526
83	R002066866	230	C	B	Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	28036	N/A
84	R002066866	81	C	B	Dairy, Beef/Dairy Grazing	Dairy, Dairy Replacement, Beef/Dairy Grazing	Existing Irrigator		N/A
85	R602064638	231	A & C	B	Arable, Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep, Arable	Existing Irrigator	9729	21303
86	R601731428	123	A	B	Dairy	Beef/Dairy Grazing	Mixed	6791	333226
87	R601700875	419	A	C	Dairy	Dairy, Dairy Replacement	Existing Irrigator	20828	1421908
88	332069837	313	A & C	B	Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Mixed	32045	510311
89	R002385791	69	A		-	Beef/Dairy Grazing, Sheep, Arable	New Irrigator		101264
90	R601888271	125	A	A	Arable	Arable	Existing Irrigator	9353	12
91	R601986108, R002065231	321	A & C	A and B	Beef/Dairy Grazing, Sheep, Horses	Beef/Dairy Grazing	New Irrigator	9656	676728
92	R601810891	76	A	B	Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	4872	96572
93	R601077116	326	A & C	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	With consultant	354023
94	R002065223	53	A & C		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New irrigator		
95	R002067200	82	A	B	Arable, Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	473	18051
96	R601677521	135	A	C	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator		70414
97	R002067501	516	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	Existing Irrigator	17976	724472
98	R000195967	712	A & C	B	Arable, Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep, Arable	Mixed	33024	254183
99	R002069598	274	A & C	B	Dairy, Dairy Replacement, Beef/Dairy Grazing, Sheep, Other	Dairy, Dairy Replacement	Mixed	18371	280769
100	R000190157	417	A & C	A	Dairy, Dairy Replacement, Sheep	Dairy, Beef/Dairy Grazing, Sheep	New Irrigator	32097	600405
101	R601846934	271	A	B	Sheep, Arable	Dairy, Arable	Existing Irrigator	30979	143376
102	R601705052	406	A & C	B	Dairy, Sheep, Goats, Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator	15347	227694
103	R601635968	143	A	B	Dairy	Dairy, Dairy Replacement, Beef/Dairy Grazing	Existing Irrigator	18359	387817
104	R601635968	114	A		Dairy, Dairy Support	Dairy, Beef/Dairy Grazing, Sheep	Existing Irrigator		
105	R601635968	39	C		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Dryland		N/A
106	R601811111	102	A		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	With consultant	0
107	R000194879	560	A & C		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Existing Irrigator	18886	221535
108	R602179524	39	A	C	Sheep, Arable	Arable	New Irrigator	With consultant	124
109	R002070162	167	A & C		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	With consultant	100
110	R002070995	258	A	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Existing Irrigator	18783	61466

	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2017/2018 Irrigation Season	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2017-2018 Irrigation Season (m3)
111	R601695545	177	A	B	Beef/Dairy Grazing	Beef/Dairy Grazing	Mixed	11538	65556
112	R601677113	309	A & C	C	Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	29550	0
113	R601677113	53	A		Sheep	Beef/Dairy Grazing	New Irrigator		0
114	R601677113	16	C		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator		N/A
115	R601677113	22	C		Deer	Beef/Dairy Grazing	Dryland		N/A
116	R601342260	402	A	A	Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator	11336	1468581
117	R002069091	475	A & C	A	Dairy	Dairy, Dairy Replacement, Beef/Dairy Grazing	Existing Irrigator	58654	1443893
118	R002069091	127	C		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator		N/A
119	R601649233	148	A		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing	Existing Irrigator	4087	519036
120	R600961861	363	A	D	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	With consultant	847,439
121	333296012	182	A	C	Dairy	Dairy, Dairy Replacement	Existing Irrigator	27235	217513
122	333296012	61	C		Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator		N/A
123	R601677369	51	A		Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Existing Irrigator	With consultant	0
124	R601768445	4	A	Small Block	Horticulture	Horticulture	New Irrigator	Small Block	
125	R002077451	203	A & C	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Existing Irrigator	With consultant	56335
126	R601436329	128	A & C	B	Sheep, Arable	Sheep, Arable	New Irrigator	10023	33640
127	R002065550	50	A	B	Sheep	Sheep	New Irrigator	1033	13994
128	R002069865	146	C	B	Sheep	Sheep	Existing Irrigator	6025	N/A
129	R002069865	64	A		Arable	Arable	Existing Irrigator	2733	2762
130	R601880636	301	A	B	Beef/Dairy Grazing	Beef/Dairy Grazing	Mixed	28198	609431
131	R002065606	276	A	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep, Arable	Mixed	26147	98151
132	R002069369	127	A	B	Beef/Dairy Grazing, Other	Dairy	Existing Irrigator	45887	716212
133	R002069369	198	A		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator		
134	R002069369	110	A		Sheep	Dairy, Beef/Dairy Grazing	New Irrigator		
135	R002069369	43	C		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator		N/A
136	R601772591	333	A	B	Sheep, Arable	Sheep, Arable	Mixed	25522	147867
137	R601677415	183	A & C	B	Sheep	Sheep	New Irrigator	4567	73669
138	R601929899	78	A & C	B	Sheep, Deer	Beef/Dairy Grazing	New Irrigator	4914	86998
139	R601693895	271	A	B	Dairy	Dairy	Existing Irrigator	22168	252310
140	R601724677	154	A & C	B	Dairy, Dairy Replacement	Dairy, Dairy Replacement, Beef/Dairy Grazing	Existing Irrigator	14829	407972
141	R601527405	157	A	A	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	Existing Irrigator	18913	144816
142	R601527405	102	C		Sheep	Sheep	Existing Irrigator		N/A
143	R601420082	170	A	B	Arable	Sheep, Arable	Existing Irrigator	6,553	235061
144	R002065622, R601802333	270	A & C	A	Sheep, Arable	Beef/Dairy Grazing, Sheep	Existing Irrigator	18592	212334
145	334588351	220	A	B	Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	16745	325198
146	R601715848	204	A	B	Sheep	Sheep	New Irrigator	11022	160310
147	R002070987	464	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	11239	423836
148	R002070987	62	A & C	B	Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	2671	50812
149	R601812932	219	A & C	B	Beef/Dairy Grazing, Sheep, Deer, Other	Beef/Dairy Grazing, Sheep, Arable	Mixed	9621	100593

	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2017/2018 Irrigation Season	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2017-2018 Irrigation Season (m3)
150	R002065517	139	A	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	6497	184529
151	R601771454	124	A	B	Arable	Arable	New Irrigator	15721	234174
152	R601771454	51	C		Arable	Arable	Dryland		N/A
153	R601522705	30	A	New to scheme	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Dryland	With consultant	274
154	R601310651	222	A & C	B	Dairy, Heifers, Beef/Dairy Grazing	Dairy	Mixed	11028	182336
155	R601395274	891	A & C	B	Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Mixed	23024	51556
156	R001341723	517	A & C	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Mixed	33063	141543
157	330823437	247	A & C	B	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	Mixed	14826	116814
158	R601414295	249	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	16263	247496
159	R601225069	162	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	6615	74578
160	R601772876	509	A & C	D	Beef/Dairy Grazing, Sheep, Arable	Beef/Dairy Grazing, Sheep, Arable	New irrigator	21045	173682
161	R601812924, R002069890	360	A	B	Sheep	Sheep	New Irrigator	18470	268272
162	R601818248	81	A	C	Beef/Dairy Grazing, Arable	Beef/Dairy Grazing, Arable	Existing Irrigator	7358	43891
163	R600933345	250	A & C	B	Dairy	Dairy, Dairy Replacement	Existing Irrigator	6480	664877
164	R600933345	219	A & C	B	Dairy	Dairy, Dairy Replacement, Beef/Dairy Grazing, Arable	Existing Irrigator	15778	768918
165	R002385791	139	A		-	Beef/Dairy Grazing, Sheep, Arable	New Irrigator		274158
166	R600933345	299	A	A	Dairy	Dairy, Dairy Replacement	Existing Irrigator	9793	906786
167	R002071851	796	A & C	B	Sheep	Sheep	New Irrigator	30140	3
168	R602425096	154	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	2904	56425
169	R601846942 R601203481	100	A & C	B	Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator	2542	163602
170	R601706849	249	A & C	B	Sheep	Sheep	Mixed	15776	198352
171	R601654156	267	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	16667	646854
172	R601715830	119	A	C	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing, Sheep	New Irrigator	5685	52084
173	R600618679	43	A	New to scheme	Beef/Dairy Grazing	Beef/Dairy Grazing, Sheep, Arable	New Irrigator	2688	778
174	R601847876	232	A	A	Beef/Dairy Grazing, Sheep	Dairy	New Irrigator	20293	750495
175	R601677679	222	A & C	B	Beef/Dairy Grazing, Sheep	Beef/Dairy Grazing	Existing Irrigator	10033	137568
176	R601689821	388	A	B	Sheep, Arable	Sheep, Arable	Existing Irrigator	8835	489410
177	R601308568	400	A & C	B	Beef/Dairy Grazing, Sheep, Arable, Other	Beef/Dairy Grazing, Sheep, Arable	Mixed	26265	114408

	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2018/2019 Irrigation Season	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2018-2019 Irrigation Season (m3)
178	R002070219	441	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	27763	202144
179	R601618338	120	A		Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	14522	456286
180	R000190421	160	A		Dairy	Dairy	Existing Irrigator	21906	
181	R000190421	362	A		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator		675825
182	R601154421	401	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	35451	407019
183	R601531691	188	A		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator	8283	182561
184	R000075436	355	A		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	20900	416661
185	R600354248	361	A	B	Dairy, Dairy Replacement, Beef/Dairy Grazing	Dairy, Dairy Replacement	Existing Irrigator	23817	629309
186	R601514346	348	A		Dairy	Dairy	Existing Irrigator	44836	1378372
187	R002069997	184	A		Beef/Dairy Grazing	Dairy	Existing Irrigator		
188	R002337584	2717	A		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator	303404	5638736
189	R601249286	214	A		Dairy, Dairy Replacement, Beef/Dairy Grazing	Dairy, Dairy Replacement, Beef/Dairy Grazing	Existing Irrigator	19724	59032
190	R002051192	214	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	9424	306866
191	R002061376	325	A		Dairy	Dairy	Existing Irrigator	14177	1537062
192	R002061376	384	C		Dairy	Dairy	Existing Irrigator	20360	N/A
193	R002071568	201	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	22979	779630
194	R002340551	347	A		Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	14938	554445
195	R601154439	217	A		Dairy, Beef/Dairy Grazing	Dairy, Dairy Replacement	Existing Irrigator	17558	682607
196	R601412047	207	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	4873	465881
197	310034746	372	B	A	Dairy	Dairy	Existing Irrigator	52916	1214006
198	R002066874	114	A		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	23071	345094
199	R002066874	426	C		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator		N/A
200	R000194731	394	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	16115	1170441
201	R002381672	447	A	B	Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator	15722	301977
202	R002381672	0	C		Beef/Dairy Grazing	Dairy	Existing Irrigator	31412	N/A
203	R600293168	237	A		Dairy, Beef/Dairy Grazing	Dairy, Dairy Replacement	New Irrigator	52944	880476
204	R600293168	258	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator		737243
205	R600293168	28	C		Beef/Dairy Grazing	Dairy, Dairy Replacement	Existing Irrigator		N/A
206	R002069261	284	B		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator	24456	91136
207	R002069571	184	A		Dairy	Dairy	Existing Irrigator	13147	658097
208	R601049783	584	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	26053	693021
209	R601049783	415	C	B	Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	Dryland	5308	N/A
210	R601820706	41	A		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	2226	126687
211	330247827	326	A	B	Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	49590	49716
212	330247827	321	A		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator		188601
213	330247827	44	A		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator		N/A
214	R601798549	184	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	19149	649579
215	R601521369	377	A		Sheep, Beef/Dairy Grazing	Dairy	New Irrigator	16891	1138866
216	R601563665	256	A		Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	28489	563566
217	R002077434	327	A		Sheep, Beef/Dairy Grazing, Deer, Other	Sheep, Beef/Dairy Grazing, Deer, Other	New Irrigator	21016	298670

	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2018/2019 Irrigation Season	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2018-2019 Irrigation Season (m3)
218	R601235498	340	A		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	31884	386757
219	R601293021	4	C		Other	Other	Existing Irrigator	<15 kg N	6170
220	R002071801	140	A		Beef/Dairy Grazing	Other	Existing Irrigator	6529	24196
221	R002071801	10	C		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator	75	N/A
222	R602062384	232	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	17019	164287
223	R602062384	157	C		Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Dryland		N/A
224	R600958623	459	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	30029	1198189
225	R002070197	346	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	11729	246886
226	R002065487	205	A		Dairy, Dairy Replacement, Beef/Dairy Grazing	Dairy, Dairy Replacement	Existing Irrigator	24734	946590
227	R601414287	160	A		Sheep	Dairy	New Irrigator		
228	R601408619	58	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	4642	193463
229	R601929988	242	A		Dairy	Dairy	Existing Irrigator	15786	928865
230	R601607751	120	A	B	Sheep, Beef/Dairy Grazing	Dairy, Sheep, Beef/Dairy Grazing	New Irrigator	6742	240084
231	R002061091	351	A		Dairy	Dairy	Existing Irrigator	34241	1135678
232	R000193524	244	A		Dairy	Dairy, Beef/Dairy Grazing	Existing Irrigator	13867	830330
233	R601977851								
234	R000192382	496	A/C	D	Sheep, Beef/dairy Grazing	Sheep, Beef/dairy Grazing	New Irrigator	22213	395355
235	R601429187	26	A		Trees and Shrub	Sheep, Beef/Dairy Grazing	New Irrigator		
236	333296357	528	A		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	New Irrigator	32614	1342788
237	R002067374	86	A		Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	3307	93152
238	R601772868	223	A		Dairy, Other	Dairy, Other	Existing Irrigator	46379	439761
239	R000189061	265	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator		
240	R601546221	417	A		Dairy, Sheep, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	New Irrigator	20276	1216549
241	R600961861	82	A				New Irrigator	4249	227789
242	R601330385	210	A		Beef/Dairy Grazing	Dairy	New Irrigator	17849	832562
243	R002066912	196	A	B	Outdoor Sows, boars, ewes, heifers,	Sows, Beef/Dairy Grazing, Dairy Replacement	New Irrigator	With consultant	166941
244	R600851471	256	A		Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	New Irrigator	16704	537912
245	R600851471	204	A		Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	8316	734494
246	R002340585	280	A		Dairy	Dairy	Existing Irrigator	13796	879790
247	R600724088	315	B		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	With consultant	3
248	R600724088	370	B		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	With consultant	1299016
249	R601604001	368	A		Sheep, Beef/Dairy Grazing	Dairy, Dairy Replacement, Sheep, Deer	New Irrigator	14054	414413
250	R601231409	239	A		Beef/Dairy Grazing, Deer	Beef/Dairy Grazing, Deer	New Irrigator	12487	351609
218	R601871891	407	A		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Mixed	50078	1536235
219	R601456541	122	A		Sheep	Sheep	New Irrigator	9440	432610
220	330446099	200	A/C		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	13515	73439
221	R002065266	248	A		Dairy	Dairy	Existing Irrigator	18542	996736
222	R601639840	383	B		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator	33764	543414
223	R002067447	533	A		Dairy	Dairy	Existing Irrigator	23075	1511075
224	R601327309	356	A		Dairy	Dairy	Existing Irrigator	21684	531670

	Shareholder ID	Property Area (ha)	Group (A, B, C)	FEP Audit Grade 2018/2019 Irrigation Season	Land Use Baseline	Land Use Current	Type of Irrigator	2017 Nitrogen Discharge Allowance (NDA) (kg)	CPWL Water Used 2018-2019 Irrigation Season (m3)
225	R601327309	230	A		Arable	Beef/Dairy Grazing	New Irrigator	36422	770125
226	R601327309	229	C		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator	25028	N/A
227	R601327309	78	C		Beef/Dairy Grazing	Beef/Dairy Grazing	Existing Irrigator	3934	N/A
228	R601327309	144	C		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator	7440	N/A
229	R002070626	419	A		Sheep, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator	35376	964261
230	R601651939	196	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	22062	503715
231	R601521351	243	A		Dairy, Dairy Replacement	Dairy	Existing Irrigator	18266	643316
232	R601612747	308	A		Sheep, Beef/Dairy Grazing	Dairy	Mixed	23271	823209
233	R601651947	243	A		Dairy, Dairy Replacement	Dairy	Existing Irrigator	15636	807699
234	R601700301	156	A		Beef/Dairy Grazing	Dairy	Existing Irrigator	13172	389374
235	R601700301	394	C	B	Dairy, Dairy Replacement	Dairy	Existing Irrigator	54147	N/A
236	R601700301	375	C	B	Dairy, Dairy Replacement	Dairy	Existing Irrigator	29095	N/A
237	R601724235	252	A		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator	27807	1014544
238	R600582216	43	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	New Irrigator	5654	70140
239	R002064588	181	A		Dairy	Dairy	Existing Irrigator	54475	916572
240	333059762	297	A		Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	New Irrigator		1193050
241	R002071894	313	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	29335	1474607
242	310034592	314	B		Dairy	Dairy	Existing Irrigator	39330	710530
243	R002071533	195	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	16343	698490
244	R60167692	195	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator	67286	674486
245	332079841	215	A		Dairy	Dairy, Dairy Replacement	Existing Irrigator		1256710
246	R601617684	234	A		Dairy, Dairy Replacement	Dairy, Dairy Replacement	Existing Irrigator		542624
247	R002333457	164	A		Dairy	Dairy, Dairy Replacement	Existing Irrigator	35309	306496
248	R002333457	263	A		Beef/Dairy Grazing, Deer	Beef/Dairy Grazing	New Irrigator		691154
249	R002333457	193	A		Dairy	Dairy	Existing Irrigator		653604
250	R600933311	226	A/C		Dairy	Dairy, Dairy Replacement	Existing Irrigator	23699	723462
251	R600933311	80	A		Sheep	Beef/Dairy Grazing	New Irrigator		222324
252	R600933311	83	A		Trees and Shrub	Beef/Dairy Grazing	New Irrigator		232605
253	R601396718	416.6	A		Sheep, Beef/Dairy Grazing	Sheep, Beef/Dairy Grazing	Mixed	41716	676475
254	R002071258	94	A		Beef/Dairy Grazing, Sheep	Sheep	New Irrigator	3844	126357
255	R601602440	284	A		Dairy, Dairy Replacement, Beef/Dairy Grazing	Dairy, Dairy Replacement	New Irrigator	19560	154515
256	R600948997	132	A		Dairy	Dairy	Existing Irrigator	16835	336854
257	R00187634	57	A		Sheep, Beef/Dairy Grazing	Dairy	New Irrigator		183939
258	R002340593	419	A	B	Dairy, Beef/Dairy Grazing	Dairy, Beef/Dairy Grazing	Existing Irrigator	19645	1221390
259	R601005280	116	A		Beef/Dairy Grazing	Dairy	New Irrigator	13171	315797
260	R002070413	276	C		Dairy	Dairy	Existing Irrigator	19436	24
261	R002070413	94	C		Dairy, Beef/Dairy Grazing	Beef/Dairy Grazing	New Irrigator		43817

APPENDIX 2

CRC165686 Condition 18 Summary

Table: CRC165686 Condition 18 Summary				
Farm	Grade	Objectives Impacting Grade	Summary of Actions	Reason for C or D Grade
1	D	• Irrigation Management • Nutrient Management • Collected Effluent management • Point Sources	• Complete commissioning tests for the new irrigation system and make any necessary adjustments. • Provide irrigation maintenance records and implement a regular maintenance schedule. • Have the recent bucket test results and soil moisture monitoring data available for review. • Provide evidence of staff training (on and off farm training). • Update/revise the nutrient budget at the end of the season to better reflect actual farm inputs. • Review and update where necessary, the current systems of nutrient management record keeping, to ensure adequate records are kept for future audits (soil test results).	In some management areas the owner was able to identify the on-farm environmental risks and discuss how the risks are being managed. The farm manager was away at the time of the audit and the records were not available to support the discussions had around the practices which is what most of the required actions relate to. The required actions from the previous audit are either incomplete or completed but there was no evidence to support them.
2	D	• Irrigation Management • Nutrient Management • Soil Management • Waterbody Management • Point Sources	• Have the commissioning certificates available for review at your next audit. • Undertake application depth and distribution uniformity assessments (bucket tests) on all irrigation systems and ensure the results are available for review at your next audit. • Prepare and implement an irrigation system regular maintenance schedule. • Ensure quantitative soil moisture records (from the soil moisture probes) are available at your next audit and you can demonstrate use of these to inform irrigation decisions. • Ensure formal irrigation management training is provided for those staff that are actively involved in the operation of the system. • Ensure a current nutrient budget is available for the auditor to assess. • Prevent stock from standing in the water races (ideally drinking under a wire), implement a way to have water troughs available in winter feed paddocks to ensure the break next to the water race is grazed last. • Keep adequate records to assess the level of confidence, i.e. soil test results, recommendation reports, fertiliser application records etc and have these available for review. • Develop a plan which identifies the required nitrogen loss reductions and how these may be achieved. • Implement remedial action to manage erosion caused through the application of irrigation water. • Put in place a programme to ensure that all paddock low spots adjacent to waterways are fenced off and developed as filter areas for any runoff from adjoining paddocks. • Prevent stock from standing in the water races (ideally drinking under a wire) or have water troughs available in winter feed paddocks. • Investigate and implement options for recycling baleage and silage wrap (e.g. Plasback or AgRecovery).	Lack of management around stock and stock water races (particularly when grazing winter feed crops). Lack of records in all management areas and no nutrient budget was provided.
3		• Irrigation Management • Nutrient Management • Soil Management Area • Waterbody Management • Point Sources	• Establish a system of recording irrigation management incidents. (i.e. what happened, actions taken, & preventative measures taken). • Undertake application depth and distribution uniformity assessments (bucket tests) on those irrigation systems that have not been tested since the last audit. • Investigate and implement plan to adopt soil moisture monitoring. Provide evidence of progress at the next audit • Investigate and attend formal irrigation management training. • Make available appropriate records to validate nutrient budget inputs. • Leave wider buffer margins when cultivating next to waterways to ensure sufficient buffering and filtering of any runoff. • When planting winter forage crops in paddocks next to waterways ensure that an adequate buffer strip of at least 2m (flat land) and 5m (sloping land) is left between • Review and update where necessary, the current systems of nutrient management record keeping, to ensure adequate records are kept for future audits.	The property has a number of on-farm environmental risks including bordering a river, stockwater races and nutrient losses (nutrient losses because of free draining soils and/or high stocking rates on crops). Lack of records present at the audit and in-action in regard to the stock water race which was brought to the attention of CPW pre-audit. The D grade is to check that the offal pit has been moved (completed) and the stockwater race has been adequately fenced within 6 months. Discussions with the owner showed that he has identified some of the areas that need work.

			• Ensure appropriate plans are in place to manage identified streambank erosion, i.e. fence off the water race so stock cannot erode the sides. • Ensure stock are excluded from all waterways on the property in accordance with regional council rules (cattle must not have access to waterways, a single hot wire allowing them to drink but restricting their access to the waterway is sufficient). • Put in place a programme to ensure that vegetated riparian margins of sufficient width to adequately filter any runoff are kept along all waterways on the property i.e. pasture strip of 2m between forage crops and the waterway. • Relocate offal pit from its current location because of the risk of ground or surface water contamination. • Implement recycling baleage wrap rather than burning	

Farm	Grade	Objectives Impacting Grade	Summary of Actions	Reason for C or D Grade
4	C	• Irrigation Management • Nutrient Management • Collected Animal Effluent	• Develop and implement an improved approach to irrigation management record keeping (maintenance, operating and training records) as an aid to better irrigation management. • Ensure formal irrigation management training is provided for those staff that are actively involved in the operation of the system. • Undertake application depth and distribution uniformity assessments (bucket tests) on those irrigation systems that have not been tested • Develop a plan which identifies the required nitrogen loss reductions and how these may be achieved • Consider the options for effluent irrigator fail safe measures and install preferred option. • Consider the options for increasing effluent storage to ensure there is sufficient storage to cover periods when soil conditions are not suitable for effluent irrigating. Implement preferred option. • Ensure staff with effluent management responsibilities are adequately trained in the management of the effluent system	On-farm environmental risks from farming activities have been identified well and this has enabled the development and implementation of sound management strategies. The exception to this is the Collected Animal Effluent Management area - the effluent storage capacity (approximately 7-10 days at the maximum level) is unlikely to be enough during periods of wet weather. The insufficient storage means that effluent could be applied when soil conditions are at or near field capacity. It is noted that this is an infrastructure constraint and this constraint appears to be well managed, e.g. trying to keep levels as low as possible during times suitable for effluent application to maximise storage availability.
5	C	• Irrigation Management • Nutrient Management • Soils Management Area • Waterbody Management • Point Sources Management	• Investigate and complete an irrigation training day. • Understand irrigation management by developing good practice into physically assessing soils regularly. • Undertaken application depth and distribution uniformity assessments (bucket tests) on those irrigation systems that have not been tested since the last audit. • Update and complete an adequate FEP for current farm management practices that meet CPWL EMS. • Upgrade the approach to scheduling irrigation applications to include an objective method of measuring soil moisture status. (e.g. Soil moisture tapes, probe or water balance). • Update/revise the nutrient budget at the end of the season to better reflect actual farm inputs. • Check out and if required apply for a resource consent for the discharge of truck wash effluent. • Implement a winter grazing management plan for wet high-risk events. • Confirm that permission has been granted to cultivate and use Queens Chain land which adjoins property and that relevant regional council rules are being complied with. • Identify Mahinga Kai points of interest. • Fence off other stockwater race and replace with reticulated stock water system. • Investigate options for relocate offal pit from its current location or cover pit to minimise the risk of ground water contamination from irrigation.	The owner has sound knowledge of his farming enterprise and has some good management practices in place with a well looked after farm. Due to his recently installed pivot irrigation though, there is large room for improvement on decision making around irrigation, nutrient, and soil management practices in order to meet the CPWL environmental management strategy. Alongside all the above actions, it is imperative the current FEP is updated over the next 2-3weeks to something more substantial i.e. adding; all farm enterprise information, soils/nutrient information, irrigation, mapping, and management criteria dictated by the CPWL EMS document in order for this audit to be signed off, or else it will be downgraded to a D (completed).

6	C	• Irrigation Management • Nutrient Management	• Obtain the commissioning certificate for the Ocmis gun from WaterForce by your next audit • Undertaken an application depth and distribution uniformity assessment (bucket test) on the irrigation system • Upgrade the approach to scheduling irrigation applications to include an objective method of measuring soil moisture status. (e.g. Soil moisture tapes, probe or water balance). • Develop and implement an improved approach to irrigation management record keeping as an aid to better irrigation management (irrigation maintenance and operation records). • Make available appropriate records to validate nutrient budget inputs (fertiliser records) • Lower soil Olsen P levels to around optimum levels for plant growth. • Review and update where necessary, the current systems of nutrient management record keeping, to ensure adequate records are kept for future audits (advisors recommendation report, fertiliser application records). • Update the nutrient budget to better reflect the farm system. Currently the most recent nutrient budget is from 2012/13.	The C grade received in this audit report is the result of a lower level of confidence that they are on track to implementing good management practice. In all management areas they were able to identify the on farm environmental risks and discuss / show these risks are being managed. However, there was a lack of evidence / records supporting the discussions had around the practices which minimise environmental risks and this is what the majority of the actions relate to.
7	C	• Irrigation Management • Point Source Management	• Undertake application depth and distribution uniformity assessments (bucket tests) on those irrigation systems that have not been tested since the last audit. • Upgrade the approach to scheduling irrigation applications to include an objective method of measuring soil moisture status. (e.g. Soil moisture tapes, probe or water • Record maintenance on irrigation as required. • Relocate offal pit to an area that is a minimum of 50 m away from the waterways	The owners have put great effort into planting along the waterways, with natives, flaxes and grasses, creating diverse riparian buffers. There are a few actions that need to be remedied before the next audit, especially in regards to the nutrient budget (completed) and the offal pit location (completed).
8	C	• Irrigation Management • Nutrient Management • Collected Animal Effluent	• Complete commissioning tests for the new irrigation system and any necessary adjustments made. • Undertake application depth and distribution uniformity assessments (bucket tests) on all irrigation systems. • Ensure soil moisture monitoring data is available at the time of the next audit. • Keep records of staff irrigation management and operation training. • Update/revise the nutrient budget at the end of the season to better reflect actual farm inputs. • Ensure that all fertiliser applied on the property by contractors, is applied by a contractor with Spreadmark Accreditation or calibration information is available. • Ensure that all fertiliser applied on the property by contractors, is applied by a contractor with Spreadmark Accreditation. • Develop a plan which identifies the nitrogen loss reductions required by 2022 and options for how this may be achieved. • Identify key effluent management risks and put in place procedures to manage for these risks • Undertake a bucket test on effluent irrigator and adjust if necessary to ensure it is applying the correct amount for the soil type. • Ensure that effluent is not applied when soil conditions are saturated or near field capacity • Ensure fertiliser applied to the effluent block is calculated taking into consideration the timing and amount of effluent applied. • Do the Dairy Effluent Storage Calculator to understand the effluent storage required on farm. Review the options for increasing effluent storage to ensure there is sufficient storage to cover periods when soil conditions are not suitable for effluent application and develop a plan for implementing the preferred option. • Ensure staff with effluent management responsibilities are adequately trained in the management of the effluent system. • Upgrade effluent management records to ensure sufficient records are available at the time of next audit.	Lack of information or records available to demonstrate when and where effluent is being applied, the insufficient effluent storage, at what application depths effluent is applied and the management systems implemented to minimise the associated risks. There is an additional effluent pond that has not been used that will be used to address the above.
9	C	• Irrigation Management • Nutrient Management • Collected Animal Effluent • Waterbody Management	• Complete application depth and distribution uniformity checks (bucket tests) on all irrigation systems. Make any necessary adjustments. • Install the chosen soil moisture monitoring probes by the start of the next irrigation season to ensure that a quantitative method is used to assist in irrigation decision making.	No current nutrient budget completed before audit therefore unable to assess the robustness of the nutrient budget (completed). Lack of records in some management areas.

			• Record all staff irrigation training completed on farm and off farm (formal irrigation training). • Develop and implement an improved approach to irrigation management record keeping as an aid to better irrigation management, i.e. maintenance records, staff training records, soil moisture monitoring data. • Undertake a bucket test on effluent irrigator and adjust if necessary, to ensure it is applying the correct amount for the soil type. • Install the chosen soil moisture monitoring system and use as an aid in effluent spreading decision making. • Ensure staff with effluent management responsibilities are adequately trained in the management of the effluent system. Record any effluent training. • Put in place a programme to ensure that vegetated riparian margins of sufficient width to adequately filter any runoff are kept along all waterways on the property.	It was evident however that the manager has given consideration to the on-farm environmental risks and their management. In some management areas the manager was able to explain and demonstrate how the risks are being mitigated. There was great attention to updating the irrigation and effluent operation records.
10		• Irrigation Management • Nutrient Management	• Prepare and implement an irrigation system regular maintenance schedule. • Undertaken application depth and distribution uniformity assessments (bucket tests) on all irrigation systems • Upgrade the approach to scheduling irrigation applications to include an objective method of measuring soil moisture status. (e.g. Soil moisture tapes, probe or water balance). • Develop and implement an improved approach to irrigation management record keeping as an aid to better irrigation management. • Review & update where necessary, the current system of nutrient management record keeping ensuring adequate records are kept for future audits. • Make available appropriate records to validate nutrient budget inputs. • Ensure that all fertiliser applied on the property by contractors, is applied by a contractor with Spreadmark Accreditation. • Develop a plan to reduce N losses by 01/01/2022.	In all management areas the owners were able to identify the on farm environmental risks and discuss how these risks are being managed. However, a lack of evidence / records supporting the discussions had around the practices which minimise environmental risks.

Original Published 31st August 2019.