

Farm Environment Plan

Property name				
Physical address				
Property Owner				
Postal address			Phone no.	
		Postcode		Mobile no.
Email address				
Contact person for owner (if different)				
Postal address			Phone no.	
		Postcode		Mobile no.
Is whole property leased?	Yes /No	If yes, provide details:		
Name of lessee:				
Postal address			Phone no.	
		Postcode		Mobile no.
Email address				
Farm Manager name (if different to owner)			Position (manager, sharemilker etc)	
			Phone no.	
Postal address			Phone no.	
		Postcode		Mobile no.
Email address				
Person responsible for implementing Farm Plan				

Notes

Version 1:

Version 2:

This Farm Environment Plan sets out the management practices that will be used to actively manage environmental issues on the property, with a focus on managing water quality and quantity within limits, as specified by Canterbury Regional Council. The Plan will be audited regularly by independent assessors in accordance with the required audit, compliance and enforcement procedures as set out in the OWL Environmental Management Strategy .

FARM PLAN NO: xxx
Version no: xx

Responsibility for Implementing the Farm Plan

As the person responsible for implementing this plan, I confirm that the information provided is correct:

Name (Plan implementer):.....

Signature:

Position (e.g. owner/manager):.....

Date:

Owner and Lessee Commitment

As owner/s of this farming business I/we are committed to ensuring that all activities on our property are undertaken in an environmentally sustainable and culturally sensitive manner. We agree to monitor our performance in meeting the management objectives and outcomes in this Plan, and take appropriate actions to address any areas where improvement is needed.

Name (Owner or owner representative) Signature Date: / /

Name (Lessee or lessee representative) Signature Date: / /

Technical approval by Opuha Water Limited	Comments									
<p>I have reviewed this plan and believe it to be:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">1. Technically sound and feasible</td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>2. Addressing the cause of identified environmental risks</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">No</td> </tr> <tr> <td>3. Able to meet the plan objectives</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">No</td> </tr> </table> <p>Name:</p> <p>Signature:</p> <p>Date:</p>	1. Technically sound and feasible	Yes	No	2. Addressing the cause of identified environmental risks	Yes	No	3. Able to meet the plan objectives	Yes	No	
1. Technically sound and feasible	Yes	No								
2. Addressing the cause of identified environmental risks	Yes	No								
3. Able to meet the plan objectives	Yes	No								

Farm Information

Farm Plan Areas	
Total area covered by Plan (ha)	
Effective area (ha)	
Irrigated area (Opuha scheme)	
Irrigated area (other water)	
TOTAL Irrigated Area (ha)	

No. of staff (labour units to operate property)	
Enterprise type	Tick <input checked="" type="checkbox"/>
Dairy	
Sheep/beef	
Cattle	
Mixed Cropping	
Orchard/vineyard	
Nursery	
Lifestyle	
Other	

DAIRY	
Peak. cows milked	
Cows milked in winter Y/N	
No. cows wintered off farm	
No. R1 &/or R2 heifers grazed on farm	
SHEEP	
Ewes	
Hoggets	
W.lambs	
Lamb trading Y/N	
OTHER STOCK (type /no)	

Irrigation type / area (water)		
Irrigation type (water)	Scheme Water Irrigated area (ha)	Other Water Irrigated area (ha)
Pivot		
Linear move		
K-line		
Gun		
Rotary boom		
Linear boom		
Border dyke		
Long lateral		
Solid set		
Drip / micro		
Other		
Total Irrigation		

CATTLE	
Cows	
R1 & R2 cattle	
Cattle trading Y/N	
No. winter grazers	
Young stock dairy support	
DEER	
Hinds	
R1 & R2 deer	
Velveting stags	
OTHER STOCK (type /no)	

Collected Effluent	
Effluent irrigation type	Area irrigated by irrigator type (ha)
Pivot	
Linear move	
K-line / pod	
Travelling irrigator	
Other	
Total effluent area (ha)	

Collected Effluent	
Effluent storage	Tick box
Less 5 days	
5-15 days	
16-30 days	
31-60 days	
>2 months	

Notes:

CROPS	
Ha in crop	
Standard Crop rotation (example rotation)	
Other - vineyards, orchards etc (describe)	
Nutrient budget	
Nutrient budget prepared by:(Person, company, contact details)	
Current farm nutrient losses: N kg/ha	
Current farm nutrient losses: P kg/ha	
N loss target (if known): kg/ha	
N loss target (if known): kg/property	

INSERT FARM MAP/S HERE

Name key roads and show North direction, to enable farm to be located on a road map.

Show on map, if present:

- Land management units (these should align with the blocks used in the nutrient budget)
- Irrigated area by irrigation type
- Effluent area
- Bores/wells
- Water races
- Conservation or covenanted areas/ indigenous bush/scrub
- Streams¹ and wetlands, including stock crossing points - Show which streams are fenced
- Standoff areas, feed pads
- Tracks
- Open drains
- Areas that are tile drained
- Lease blocks – including owner name (If the whole farm is leased from one owner, then record this information on page 1)

¹ Should we include a definition of stream, wetland (e.g. from regional council or Sustainable Dairying: Water Accord (2013))

Land Management Unit² A: (name as shown on map)

Tick relevant boxes

SLOPE	Flat	Rolling	Mod. steep	Steep

LAND USE	Pastoral	Forage Crops	Arable Crops	Small seeds	Vegetables	Other
	%	%	%	%	%	

TYPE	Movable Spray	Fixed Spray	Drip/Micro	Surface

Area of block (ha)	Stream/s present	Wetland/s present	Soil type
	Yes / No	Yes / No	

Block Strengths

Block Weaknesses

Environmental Risk Assessment for this Land Management Unit

Risk category	Inherent risk ¹ L/M/H	Reasons for risk rating	Adequacy of current practices to manage risks ²							
			Stock grazing ³	Winter grazing ³	Fertiliser application	Irrigation	Dairy effluent	Cultivation	Drain Cleaning	Earth works ⁴
N leaching ⁵									n/a	n/a
P leaching ⁵									n/a	n/a
Runoff contamination										
Erosion					n/a			n/a		
Soil compaction					n/a	n/a	n/a		n/a	

¹ Estimate the **Inherent Risk** of the problem occurring – High, Medium or Low – H, M, L

² How adequate are **your current management practices** to management the risk? Use a scale of 1 -5 where: 1 = risk not managed at all, 5 = risk fully managed

³ Under 'Stock grazing' consider general environmental risks arising from stock on this block, and under 'winter grazing' assess specific issues arising in winter

⁴ Tracks, races, recontouring etc.

⁵ Leaching' is the loss of nutrients when water drains through the soil profile below the root zone

² A land management unit is a homogenous block of land that responds in a similar way under similar management. The units should align, as far as possible, with the nutrient budget blocks

Land Management Unit B: (name as shown on map)

Tick relevant boxes

SLOPE	Flat	Rolling	Mod. steep	Steep

LAND USE	Pastoral	Forage Crops	Arable Crops	Small seeds	Vegetables	Other
	%	%	%	%	%	

TYPE	Movable Spray	Fixed Spray	Drip/Micro	Surface

Area of block (ha)	Stream/s present	Wetland/s present	Soil type
	Yes / No	Yes / No	

Block Strengths

Block Weaknesses

Environmental Risk Assessment for this Land Management Unit

Risk category	Inherent risk ¹ L/M/H	Reasons for risk rating	Adequacy of current practices to manage risks ²							
			Stock grazing ³	Winter grazing ³	Fertiliser application	Irrigation	Dairy effluent	Cultivation	Drain Cleaning	Earth works ⁴
N leaching ⁵									n/a	n/a
P leaching ⁵									n/a	n/a
Runoff contamination										
Erosion					n/a			n/a		
Soil compaction					n/a	n/a	n/a	n/a	n/a	

¹ Estimate the **Inherent Risk** of the problem occurring – High, Medium or Low – H, M, L

² How adequate are **your current management practices** to management the risk? Use a scale of 1 -5 where: 1 = risk not managed at all, 5 = risk fully managed

³ Under 'Stock grazing' consider general environmental risks arising from stock on this block, and under 'winter grazing' assess specific issues arising in winter

⁴ Tracks, races, recontouring etc.

⁵ Leaching' is the loss of nutrients when water drains through the soil profile below the root zone

Land Management Unit C: (name as shown on map)

Tick relevant boxes

SLOPE	Flat	Rolling	Mod. steep	Steep

LAND USE	Pastoral	Forage Crops	Arable Crops	Small seeds	Vegetables	Other.....
	%	%	%	%	%	

TYPE	Movable Spray	Fixed Spray	Drip/Micro	Surface

Area of block (ha)	Stream/s present	Wetland/s present	Soil type
	Yes / No	Yes / No	

Block Strengths

Block Weaknesses

Environmental Risk Assessment for this Land Management Unit

Risk category	Inherent risk ¹ L/M/H	Reasons for risk rating	Adequacy of current practices to manage risks ²							
			Stock grazing ³	Winter grazing ³	Fertiliser application	Irrigation	Dairy effluent	Cultivation	Drain Cleaning	Earth works ⁴
N leaching ⁵									n/a	n/a
P leaching ⁵									n/a	n/a
Runoff contamination										
Erosion					n/a			n/a		
Soil compaction					n/a	n/a	n/a		n/a	

¹ Estimate the **Inherent Risk** of the problem occurring – High, Medium or Low – H, M, L

² How adequate are **your current management practices** to management the risk? Use a scale of 1 -5 where: 1 = risk not managed at all, 5 = risk fully managed

³ Under 'Stock grazing' consider general environmental risks arising from stock on this block, and under 'winter grazing' assess specific issues arising in winter

⁴ Tracks, races, recontouring etc.

⁵ Leaching' is the loss of nutrients when water drains through the soil profile below the root zone

Land Management Unit D: (name as shown on map)

Tick relevant boxes

SLOPE	Flat	Rolling	Mod. steep	Steep

LAND USE	Pastoral	Forage Crops	Arable Crops	Small seeds	Vegetables	Other.....
	%	%	%	%	%	

TYPE	Movable Spray	Fixed Spray	Drip/Micro	Surface

Area of block (ha)	Stream/s present	Wetland/s present	Soil type
	Yes / No	Yes / No	

Block Strengths

Block Weaknesses

Environmental Risk Assessment for this Land Management Unit

Risk category	Inherent risk ¹ L/M/H	Reasons for risk rating	Adequacy of current practices to manage risks ²							
			Stock grazing ³	Winter grazing ³	Fertiliser application	Irrigation	Dairy effluent	Cultivation	Drain Cleaning	Earth works ⁴
N leaching ⁵									n/a	n/a
P leaching ⁵									n/a	n/a
Runoff contamination										
Erosion					n/a			n/a		
Soil compaction					n/a	n/a	n/a		n/a	

¹ Estimate the **Inherent Risk** of the problem occurring – High, Medium or Low – H, M, L

² How adequate are **your current management practices** to management the risk? Use a scale of 1 -5 where: 1 = risk not managed at all, 5 = risk fully managed

³ Under 'Stock grazing' consider general environmental risks arising from stock on this block, and under 'winter grazing' assess specific issues arising in winter

⁴ Tracks, races, recontouring etc.

⁵ Leaching' is the loss of nutrients when water drains through the soil profile below the root zone

Compliance

To fully comply with Opuha Water Ltd requirements for environmental management requires:

Compliance Requirements		Evidence for Compliance
Farm Plan is prepared, approved, implemented and maintained.		Farm Plan approved and signed
Full compliance with Scheme requirements relating to: <ul style="list-style-type: none">• Water take/use consent/s• Water metering		

Note: A list of all regional council consents held for farm activities on the property is contained in Appendix one to this plan.

Irrigation System Design and Installation

Management Objective: To ensure that all new irrigation systems and significant upgrades³ meet industry best practice standards

Required outcomes
1. New irrigation infrastructure is designed and installed to deliver water to industry best practice standards

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Required outcome: 1. New irrigation infrastructure is designed and installed to deliver water to industry best practice standards				
Poor Generally inadequate	No design or installation checks			
Basic May be adequate for small blocks with low application depth and intensity and low water use;	<ul style="list-style-type: none"> System complies with requirements for flow meter, and limits on flow rate, volume and area irrigated 			Show application depth, intensity and uniformity are adequate for soil type, slope etc.
	<ul style="list-style-type: none"> System has been designed with site specific knowledge of the soil, climate and crop needs 			
	<ul style="list-style-type: none"> Post installation checks of application rate and distribution uniformity using DIY evaluation or certified evaluator 			
Good Minimum for most spray irrigators	<ul style="list-style-type: none"> All new on-farm irrigation infrastructure is designed in accordance with Design Standards for Piped Irrigation Systems in New Zealand (Irrigation NZ, October 2012); Code of Practice for the Design of Piped Irrigation Systems in New Zealand (Irrigation NZ, October 2012) and meets scheme requirements for flow meter, and limits on flow rate, volume and area irrigated; 			Provide certificate from INZ accredited designer or from a suitably qualified independent reviewer
	<ul style="list-style-type: none"> Independent evaluation of design/s 			

³ Define 'significant upgrade' e.g. conversion border to spray; k-line to pivot

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> All new irrigation infrastructure is installed in accordance with Installation Code of Practice for Piped Irrigation Systems (Irrigation NZ, January 2012); 			<p>Provide commissioning report</p> <p>Manuals available</p>
	<ul style="list-style-type: none"> Commissioning tests show that system performs to desired specifications for: <ul style="list-style-type: none"> System capacity Application depth Application intensity Application Uniformity ($\geq 85\%$) Return interval 			
	<ul style="list-style-type: none"> Operation and maintenance manuals obtained. 			
<p>Premium Required to ensure design can achieve effective and efficient use of water</p>	<ul style="list-style-type: none"> Comprehensive evaluation and decision-making process used (e.g. INZ Decision support process). 			

Irrigation Management

Management Objective: To ensure efficient on-farm water use that meets crop needs and minimises losses.

Required outcomes				
1. All irrigation applications are justified by monitoring and/or other assessment or information				
2. Farm practices optimise water applications from irrigation system				
3. All staff involved in the operation and maintenance of the irrigation system are suitably trained				
Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Required outcome: 1. All irrigation applications are justified by monitoring and/or other assessment or information				
Poor Generally inadequate	No formal monitoring or other practices used to make irrigation application decisions			
Basic May be adequate for small blocks, low application rates, low water use; or border dyke on roster	Observations / basic checks made			
	• Measure rainfall			
	• Consideration of rain/weather forecast			
	• Dig holes and check			
	• Use a probe (e.g. electric fence standard) to check soil moisture			
	• Other...			
Good Desirable minimum for most spray irrigators	Measurements taken and used			
	• Rainfall measured and recorded			<ul style="list-style-type: none"> • Rainfall records • Soil moisture records • Soil temperature records • Staff questioning of irrigation scheduling
	• Consideration of rain/weather forecast			
	• Soil temperature monitored			
	• Soil moisture assessment actively used:			
	○ Buried sensors			
	○ Scheduling service			
	○ Hand held probe			
	○ Modelling e.g. aquabook			
	○ Plant sensors			
○ Water balance calculation				
• Crop irrigation scheduling model used				

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> Use basic checks (holes / fence standard) to check technology / calculations Other ... 			
Premium Required to fully demonstrate efficient water use	<p>“Good” plus:</p> <ul style="list-style-type: none"> Farm-wide water balance modelling using local climate data and ground-truthed with soil moisture monitoring Records of measurements and irrigation decisions kept to demonstrate how soil moisture levels are managed between field capacity and the Management Allowable Deficit (irrigation trigger point) Sensor records stored on computer or in notebook and reviewed regularly or provided by scheduling service Variable rate irrigation 			<ul style="list-style-type: none"> Provide records Staff questioning of irrigation scheduling
<p>Required outcome: 2. Farm practices optimise water applications from irrigation system</p> <p>Only fill in sections relevant to your irrigation type:</p> <p>Go to “Optimise applications for spray systems” for linear, pivot, travelling gun/boom, rotary boom, pod systems</p> <p>Go to “Optimise applications for micro /drip” for micro sprinkler or drip systems</p> <p>Go to “Optimise applications for surface irrigation” for border/flood systems)</p>				
	Optimise applications for spray systems			
Poor Generally unacceptable	<ul style="list-style-type: none"> Excessive application depths Low application uniformity 			
Basic				
Good Desirable minimum for	<ul style="list-style-type: none"> Daily checks for excessive runoff or ponding and adjust system, if necessary 			

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
most low pressure spray systems	<ul style="list-style-type: none"> System closed down if excessive runoff and/or ponding occurs Application to non-productive areas (tracks, impermeable surfaces, rivers streams) is minimised Daily checks for blocked nozzles, leaking hydrants or hoses, irrigator alignment and problems fixed Rotation / irrigator speeds adjusted according to ET, soil moisture status and rainfall 			<ul style="list-style-type: none"> Provide irrigation application calibration record (e.g. a spreadsheet).
Moveable systems	<ul style="list-style-type: none"> Spray line shifts made to suitable plan (e.g. GPS on bike; follow map) Lines moved to cover any dry patches that occur 			<ul style="list-style-type: none"> Application rate check results Staff questioning of irrigation operations Irrigation incident records
Pivots	<ul style="list-style-type: none"> Wetted width widened on outer spans on long pivots or on slopes (e.g. by fitting boom-backs or clipping hoses over truss rods and fitting wide spray sprinklers) 			<ul style="list-style-type: none"> Baseline evaluation report System evaluation report that sets out the system performance and upgrade workplan
	<ul style="list-style-type: none"> Lines shut down where effluent irrigation is being applied Monitor pasture/crop growth and development Water distributed evenly (DU) Application rate checks with buckets or rain gauge pre-season and keep records System in place for staff to report/fix problems A baseline audit of the irrigation system is completed by an Irrigation NZ accredited evaluator to identify efficiency improvements. 			

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> Any required upgrades should be included in a workplan with timelines for completion 			
Premium Required to fully demonstrate efficient water use	“Good” plus: <ul style="list-style-type: none"> Application depth and uniformity checks with buckets or rain gauge pre-season, and regularly through season 			<ul style="list-style-type: none"> Application rate checks System evaluation report and workplan Water use check report
	<ul style="list-style-type: none"> System evaluation by certified evaluator 5 yearly, and programme to remedy problems implemented 			
	<ul style="list-style-type: none"> Annually complete water use checklist 			
	Optimise applications for micro /drip			
Poor				
Basic	<ul style="list-style-type: none"> Pre-season calibration of at least half system area 			
Good Desirable minimum for most systems	<ul style="list-style-type: none"> System layout plan and control points available at system on/off control station 			Provide irrigation application rate record (e.g. a spreadsheet). See example at: http://www.pagebloomer.co.nz/resources/irrigation-calibration/ Sight system layout plan Sight calibration sheets Sight log book
	<ul style="list-style-type: none"> Pre-season calibration check of each block. Run-time adjustment factors applied 			
	<ul style="list-style-type: none"> Regular readings of operating pressure and flow logged by block 			
	<ul style="list-style-type: none"> System flushing at least annually 			
	<ul style="list-style-type: none"> Determine cause of and manage identified wet or dry spots 			

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> A baseline audit of the irrigation system is completed by an Irrigation NZ accredited evaluator. If required, upgrades should be included in a workplan with timelines for completion 			Baseline audit sighted Upgrade workplan sighted
Premium Required to fully demonstrate efficient water use	<p>“Good” plus:</p> <ul style="list-style-type: none"> System maintenance plan in place and records kept 			Maintenance plan and records Evaluation report Completed water use checklist
	<ul style="list-style-type: none"> System evaluation by certified evaluator within last 5 years; and programme to remedy problems implemented 			
	<ul style="list-style-type: none"> Annually complete water use checklist 			
	Optimise applications for surface irrigation (e.g. border systems)			
Poor				
Basic				
Good Desirable minimum	<ul style="list-style-type: none"> Paddocks are monitored and clocks adjusted to soil moisture status, ET, rainfall and length of grass 			Provide irrigation application record Staff questioning of irrigation operations
	<ul style="list-style-type: none"> Monitor indicator points/areas are setup and clocks adjusted accordingly 			
	<ul style="list-style-type: none"> Gate seals maintained 			
	<ul style="list-style-type: none"> Sills cleaned 			
	<ul style="list-style-type: none"> Head races hard grazed 			
	<ul style="list-style-type: none"> Borders maintained and any holes repaired 			
Premium	<ul style="list-style-type: none"> System in place for staff to report/fix problems 			

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Required outcome: 3. All staff involved in the operation and maintenance of the irrigation system are suitably trained				
Poor Generally unacceptable	No training			
Basic	<ul style="list-style-type: none"> Understand resource consent conditions 			
	<ul style="list-style-type: none"> Limited training 			
Good Desirable minimum for most irrigators	<ul style="list-style-type: none"> Relative to their responsibilities, provide on-farm training for all staff involved in irrigation management, including but not limited to: <ul style="list-style-type: none"> How to avoid runoff and/or ponding Correct application depths Emergency procedures System monitoring for problem System maintenance Individual staff responsibilities and accountability 			<ul style="list-style-type: none"> Staff questioning to determine competency Irrigation management data and information is available to staff
Premium Required to fully demonstrate efficient water use	At least 1 staff member with Irrigation System Operator Training Standard (from Irrigation NZ). This staff member to be responsible for managing the irrigation systems on-farm.			<ul style="list-style-type: none"> Certificate of attendance

Nutrient and Soil Management

Management Objective: To minimise nutrient and sediment losses from farming activities to ground and surface water.

Required outcomes
1. All sources and potential losses of nutrients, sediment and effluent are clearly identified
2. Nitrate loss target/s for property, as set by scheme and/or regional council, are met or exceeded.
3. Phosphate (P) and sediment losses to ground and waterways are minimised.
4. Soils are well-managed to optimise infiltration and minimise runoff

Acceptability of practices	Baseline Management Practices (other practices may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Required outcome: 1. All sources and potential losses of nutrients, sediment and effluent are clearly identified				
Poor Unacceptable	No action in place to identify losses			
Basic May be adequate for small blocks and/or low intensity operation	<ul style="list-style-type: none"> Basic nutrient budget identifies all N and P inputs (only an option where Overseer or other approved budget is not required by regulation) 			
	<ul style="list-style-type: none"> Likely sources of sediment losses identified 			
Good Required minimum for most situations	Nutrient budget			<ul style="list-style-type: none"> Provide the nutrient budget & parameter report (input data)
	<ul style="list-style-type: none"> Whole farm nutrient budget uses budgets for each land management unit/block and is prepared by a suitably qualified operator, using Overseer or approved alternative tool and using agreed input parameter protocol (e.g. industry or regional council) . 			
	<ul style="list-style-type: none"> Nutrient budget calculations take full account of all nutrient inputs and outputs Particular note is taken of N and P requirements and losses from the property. 			
	<ul style="list-style-type: none"> Whole farm nutrient budgets are reviewed and revised regularly or as required by regional council. 			

Acceptability of practices	Baseline Management Practices (other practices may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<p>Critical sites for P and sediment loss</p> <ul style="list-style-type: none"> Identify locations that are key sites for P and sediment losses Plan how to reduce P and sediment losses from these areas. 			<ul style="list-style-type: none"> Map showing critical source areas plus plan to reduce nutrient and sediment losses from
Premium Required to show excellence in nutrient management	Critical Source Area map and nutrient budget used as key on-farm management tools			<ul style="list-style-type: none"> Evidence that CSA map and nutrient budget integrated into day to day decision making processes.
Required outcome: 2. Nitrate loss target/s for property as set by Scheme and/or regional council are met or exceeded.				
Poor Unacceptable	<ul style="list-style-type: none"> Nitrate loss target not met and/or no plan in place to meet target by due date. 			
Basic May be adequate for small blocks and/or low intensity operation	<ul style="list-style-type: none"> Nitrogen risks noted and farm practices address any issues. 			<ul style="list-style-type: none"> Copy of basic nutrient plan provided.
Good Required minimum for most situations	N losses managed to meet targets by:			Copy of nutrient management plan prepared by qualified person, including: <ul style="list-style-type: none"> nutrient budget soil test results and nutrient analysis (if available) fertiliser recommendations from fertiliser representative. Application records Proof of placement maps Soil moisture records and application records Crop rotation records Record of wintering
	Selecting amount /type to apply:			
	<ul style="list-style-type: none"> Use recommendations on type and amount from qualified person (fertiliser consultant or farm advisor) or 			
	<ul style="list-style-type: none"> Use an industry approved tool (e.g. wheat calculator) 			
	Application decisions based on:			
	<ul style="list-style-type: none"> Soil testing Plant analysis Nutrient budget results Assessment of pasture quality Deep soil nitrogen testing for arable crops Crop models 			

Acceptability of practices	Baseline Management Practices (other practices may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> ○ Matching nitrogen applications in proportion to other nutrients, according to plant and animal requirements 			adjustment practices <ul style="list-style-type: none"> ● Stock numbers ● Record of supplements purchased and used on property, and made and sold from property
	Application techniques and timing			
	<ul style="list-style-type: none"> ● Using Spreadmark standards or using suitably calibrated equipment for N applications. 			
	<ul style="list-style-type: none"> ● Lower rates of nitrogen (not exceeding 50 kg N/ha/application) applied to match growth cycle of pasture and soil moisture conditions. 			
	<ul style="list-style-type: none"> ● Pasture is at least 25mm high (approx 1000kg DM/Ha) before nitrogen is applied 			
	<ul style="list-style-type: none"> ● Nitrogen application is matched to times of high plant growth and crop requirements 			
	<ul style="list-style-type: none"> ● Nitrogen is not applied when the 10cm soil temperature at 9am is less than 6 degrees Celsius 			
	<ul style="list-style-type: none"> ● Nitrogen fertiliser is not applied when the ground is saturated and/or when the tile drains are running 			
	<ul style="list-style-type: none"> ● Nitrogen not applied to excessively dry or compacted soil 			
	Other management practices to reduce N losses:			
	<ul style="list-style-type: none"> ● Cultivation practices and timing adjusted to minimise N losses. 			
	<ul style="list-style-type: none"> ● Crop rotations adjusted to maximise the use of residual N in the soil and minimise N losses 			
	<ul style="list-style-type: none"> ● Stock wintering practices adjusted to minimise nutrient losses. 			

Acceptability of practices	Baseline Management Practices (other practices may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> • Soil compaction from stock grazing and/or heavy machinery movement minimised • Stock numbers adjusted to meet N target. • Harvest supplements and export from property. • Supplements (e.g. maize silage) substituted for proportion of N fertiliser use. 			
Premium Required to show excellence in nitrogen loss minimisation from farming activities	<ul style="list-style-type: none"> • GPS technology is used for precise application and for a digital record of fertiliser proof of placement, for all N fertiliser spread on-farm 			<ul style="list-style-type: none"> • Evidence of technology use
Required outcome: 3. Phosphate (P) & sediment losses to groundwater and waterways are minimised and critical source areas managed.				
Poor Unacceptable	No action in place to manage critical sources and minimise losses			
Basic May be adequate for small blocks and/or low intensity operation	Phosphate and sediment risks noted and managed for			
Good Required minimum for most situations	Phosphate and sediment losses managed by: Selecting amount /type to apply: <ul style="list-style-type: none"> • Use recommendations on type and rate of P applications, as recommended by qualified person (fertiliser consultant or farm advisor) based on: <ul style="list-style-type: none"> ○ Soil testing ○ Plant analysis ○ Nutrient budget results ○ Assessment of pasture quality ○ Need for capital or maintenance fertiliser 			<ul style="list-style-type: none"> • Soil test and fertiliser recommendations. • Fertiliser application records • Nutrient budget • Spreadmark accreditation certificate • Fertiliser application records • Field observation • Proof of placement charts • Critical source map and
		Application techniques and timing		

Acceptability of practices	Baseline Management Practices (other practices may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> Use Spreadmark standards or using suitably calibrated equipment for P applications. 			action plan
	<ul style="list-style-type: none"> Use split applications where the single application rate would exceed 100kgP/ha, unless there is sound justification around not adhering to this e.g. dry autumn and winter conditions leading to a potential animal welfare issue 			
	<ul style="list-style-type: none"> Limit phosphate application between June-August 			
	<ul style="list-style-type: none"> Fertiliser is not applied when the soil is saturated and/or excessively dry 			
	<ul style="list-style-type: none"> Fertiliser is not applied to severely compacted soils 			
	<ul style="list-style-type: none"> Vegetation buffer strips of sufficient width (leave a riparian margin of at least 1-2m on flat land and 5m or more on sloping land.) to filter any runoff are maintained adjacent to all waterways 			
	<p>Managing key sites to reduce P and sediment losses</p> <ul style="list-style-type: none"> Implement plan to reduce P losses at critical locations 			
<p>Premium Required to show excellence in phosphate and sediments minimisation from farming activities</p>	GPS technology is used for precise application and for a digital record of fertiliser proof of placement, for all phosphate fertiliser spread on-farm			<ul style="list-style-type: none"> Evidence of technology use.
Required outcome: 4. Soils are well-managed to optimise infiltration and minimise runoff				
Poor				
Basic				

Acceptability of practices	Baseline Management Practices (other practices may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Good Required minimum for most situations	<ul style="list-style-type: none"> • Check for soil compaction 			<ul style="list-style-type: none"> • Field inspection • Soil aeration records • Soil map of property and plan to manage major soil differences
	<ul style="list-style-type: none"> • Actively reduce adverse effects of significant soil compaction on water and effluent infiltration rates (e.g. using soil aerator etc) 			
	<ul style="list-style-type: none"> • Recognize the difference in soil types and soil properties and manage accordingly to minimise soil compaction damage 			
	<ul style="list-style-type: none"> • Increased crop residue is left in the soil 			
	<ul style="list-style-type: none"> • Heavy machinery restricted to specified pathways 			
Premium Required to show excellence in phosphate and sediments minimisation from farming activities.	<ul style="list-style-type: none"> • Regular Visual Soil Assessments (VSA) and records kept. 			<ul style="list-style-type: none"> • VSA records

Collected Effluent Management⁴

Management Objective: To manage the operation of the effluent system to avoid adverse effects on water quality

Required outcomes				
1. Effluent management and discharge comply fully with all regional council consent requirements 365 days / year				
2. Effluent discharge correctly applied to avoid contamination of surface or ground water				
Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Required outcome: 1. Effluent system and application fully compliant with regulations 365 days / year				
Poor Inadequate	<ul style="list-style-type: none"> Effluent consent not current Effluent consent monitoring shows major or minor non-compliance 			<ul style="list-style-type: none"> Regional council compliance report
Good Minimum for most effluent management	<ul style="list-style-type: none"> Effluent consent is current Effluent system fully compliant with consent conditions 			<ul style="list-style-type: none"> Regional council compliance report
Required outcome: 2. Effluent discharge correctly applied to avoid contamination of surface or ground water				
Poor Generally inadequate	<ul style="list-style-type: none"> Limited storage which means effluent must be applied even when soils conditions are not suitable. Effluent irrigator applies effluent at application rates which lead to ponding and/or runoff. 			<ul style="list-style-type: none"> Visual observation and/or evidence that demonstrates this is happening
Basic May be sufficient for some situations				
Good Minimum for most effluent management	<ul style="list-style-type: none"> High risk effluent disposal areas identified Effluent applied at rates that do not lead to ponding and/or runoff. Minimise amount of effluent irrigation by careful yard management and diversion of shed roof water. 			<ul style="list-style-type: none"> Map showing risk areas Bucket test information System set-up specifications and

⁴ This section of this FEP may be covered by an approved audited Dairy Supplier plan or similar e.g. from Fonterra, Synlait.

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	<ul style="list-style-type: none"> Sufficient storage capacity is available at all times to ensure that effluent is not applied when soil conditions are near field capacity. 			<p>follow-up tests</p> <ul style="list-style-type: none"> Bucket tests & visual observation Map of effluent area. Map or dairy record of effluent applications. Visual observation + map showing exclusion zones Staff training schedule
	<ul style="list-style-type: none"> Effluent irrigation system is capable of delivering the correct amount of effluent for soil type and slope. 			
	<ul style="list-style-type: none"> Correct amounts of effluent applied for specific soil properties and slope 			
	<ul style="list-style-type: none"> Ensure that effluent area covers at least 8ha/100 cows 			
	<ul style="list-style-type: none"> Ensure an even spread of effluent over the whole of the designated area. 			
	<ul style="list-style-type: none"> Take immediate action if incident or breakdowns occurs including: <ul style="list-style-type: none"> Rectify the problem Clean up if possible Take action to minimise the risk of the incident / breakage occurring again 			
	<ul style="list-style-type: none"> Staff who are involved in the management of the effluent system are fully trained in the use of the system. 			
<p>Premium Necessary to show excellence in effluent management</p>	<ul style="list-style-type: none"> Proof of placement technology used to identify areas of effluent application Fail safe systems such as Gator-buddy and variable rate irrigation to minimize risk of incidents, and application of effluent to high risk areas. 			<ul style="list-style-type: none"> Proof of placement printouts Visual observation

Waterway and Wetland Management

Management Objective: To manage waterways, wetlands and their margins to avoid stock damage and minimise inputs of nutrients, sediment and faecal contamination

Required outcomes
1. Stock damage to waterways and wetlands is minimised
2. Farm practices minimise soil, nutrient and faecal contamination of waterways

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
Required outcome: 1. Stock damage to waterways and wetlands minimised				
Poor Generally inadequate	<ul style="list-style-type: none"> Stock have access to waterways 			
Basic May be sufficient for some situations	<ul style="list-style-type: none"> Grazed only with sheep 			<ul style="list-style-type: none"> Field inspection
Good Minimum requirements for most waterways, wetlands and regularly wet areas	<ul style="list-style-type: none"> Stock excluded from streams and wetlands in accordance with ECAN rules 			<ul style="list-style-type: none"> Field inspection of waterways and wetlands
	<ul style="list-style-type: none"> All regular stock crossings have bridge or culvert 			
Premium Necessary to show excellence in water body management	<ul style="list-style-type: none"> Approaches to stock crossings managed to avoid runoff to waterways 			<ul style="list-style-type: none"> Field inspection of waterways and wetlands
	<ul style="list-style-type: none"> All stock crossings have bridge or culvert 			
Required outcome: 2. Farm practices minimise soil, nutrient and faecal contamination of waterways				
Poor Generally inadequate	<ul style="list-style-type: none"> Soil and nutrient contamination from farming practices regularly enters waterways 			
Basic				
Good Minimum requirements for most waterways	<ul style="list-style-type: none"> Maintain vegetated riparian margin suitable to adequately filter any run-off from freshly cultivated or fertilised blocks and/or winter grazing blocks. Width of margin may vary from 1-10 metres 			<ul style="list-style-type: none"> Field inspection of waterways and wetlands

Acceptability of practices	Baseline Practices (examples of practices, others may be added)	Current Practices	Additional actions proposed to meet outcomes & timeframes for completion	Evidence for Compliance
	depending on slope.			
	<ul style="list-style-type: none"> Strip next to riparian margin grazed last when break feeding winter feed crops. 			
	<ul style="list-style-type: none"> Minimum or no-till cultivation techniques used when high risk of run-off from cultivated blocks. 			
	<ul style="list-style-type: none"> Runoff from stock races and tracks does not flow directly into waterways. Where necessary this runoff is directed to open pasture. 			
Premium Necessary to show excellence in water body management	<ul style="list-style-type: none"> Provide adequate filtering of sediment and nutrients e.g. by appropriate riparian buffers at low points. 			<ul style="list-style-type: none"> Field inspection of waterways and wetlands
	<ul style="list-style-type: none"> Riparian planting programme prepared and implemented. 			
	<ul style="list-style-type: none"> Permanently or frequently wet areas within paddocks are managed to avoid contamination from stock or fertiliser (e.g. fenced out, suitable planting, left uncultivated) 			

Summary of Management Areas covered	Completed	If not completed, please give reason
Irrigation System Design and Installation	Yes / No	Established irrigation system
Irrigation Management	Yes / No	No irrigation
Nutrient and Soil Management	Yes / No	
Collected Effluent Management	Yes / No	No collected effluent <i>or</i> Covered by alternative plan (name)
Waterway and Wetland Management	Yes / No	No waterways or wetlands

Summary of agreed actions

Agreed actions	Completion date	Person responsible	Completed
Irrigation management			
Nutrient and soils management			
Collected animal effluent management			
Waterways and wetland management			