

ENVIRONMENTAL FARM PLAN FOR IRRIGATED LAND USE

AUDIT REPORT EXAMPLE MIXED CROPPING / SHEEP FARM

This farm plan audit report example has been prepared as part of
'An Environmental Management System for Irrigation Schemes in New Zealand'

The Ritso Society Inc.
June 2009



Disclaimer

All information contained within this publication has been compiled with due care, checked for accuracy and published in good faith. It is for the purpose of guidelines only. The Ritso Society, its employees, agents and consultants, and MAF and its employees and agents expressly disclaim all liability to any person relying on the whole or any part of this publication. They accept no responsibility on any grounds whatever, including liability in negligence, for the use or mis-use of the information contained in this document.

ENVIRONMENTAL FARM PLAN FOR IRRIGATED LAND USE: AUDIT REPORT EXAMPLE – MIXED CROPPING/SHEEP FARM

is part of

An Environmental Management System for Irrigation Schemes in New Zealand

published by

The Ritso Society (Inc)
P.O. Box 75, Darfield, Canterbury

June 2009

ISBN 978-0-478-33898-0 (Print)
ISBN 978-0-478-33899-7 (Online)

This Environmental Management System (EMS) for Irrigation Schemes has a number of components.

The templates, manuals and worked examples included in “An Environmental Management System for Irrigation Schemes in New Zealand” are listed below, and are all available on www.ritso.org.nz. They may be copied or adapted for specific schemes.

Scheme Sustainability Protocol

Preparing Your Farm Plan for Irrigated Land Use: Workshop Manual
Environmental Farm Plan for Irrigated Land Use: Audit Manual (includes audit template)

Environmental Farm Plan for Irrigated Land Use: dairy farm template
Environmental Farm Plan for Irrigated Land Use: cropping farm template

Environmental Farm Plan for Irrigated Land Use: example of a dairy farm plan
Environmental Farm Plan for Irrigated Land Use: example of a mixed cropping & sheep plan

Farm Plan Audit: example of dairy plan audit report
Farm Plan Audit: example of a mixed cropping & sheep audit report

Prepared on behalf of The Ritso Society (Inc)
by

Sue Cumberworth
The AgriBusiness Group
www.agribusinessgroup.com

Claire Mulcock
Mulgor Consulting Ltd
www.mulgor.co.nz

Ian Brown
Ian Brown Consulting

Best Water Irrigation Scheme Ltd¹ 2009 Farm Plan Audit Report

Property name: Leighton

Property owner: Andrew and Marie Brooker

Person responsible for plan implementation: Andrew Brooker

¹ 'Best Water Irrigation Scheme Ltd' is an imaginary irrigation scheme

Management area: Irrigation management

Note: A separate sheet should be used for each management area.

Objectives	Targets	Progress made	FCom ²	CoCA	CoFA	NCom	Verification
Objective 1: To comply with all resource consent requirements relating to the supply of irrigation water including:	Full compliance with consent requirements	Full compliance with Environment Canterbury consent requirements achieved. 2 wells are metered and annual take recorded and kept as printout	✓				Notification letter received from environment Canterbury.
Objective 2: To ensure that all irrigation systems on the property are capable of operating to meet industry & scheme standards for best practice irrigation	System evaluation undertaken by 31 March 2010 All upgrades will be completed no later than 24 months after receipt of the evaluation report.	Gauges placed under the Pivots and Tuirbo Rainers at the start and end of the season. Flow tests undertaken on the lines. Regular checks made on system operating pressures. System upgrades made as required. System still to be evaluated by an Irrigation NZ accredited evaluator	✓				Stated practice and irrigation records.
Objective 3: To ensure all key staff members are fully trained in the operation & maintenance of those aspects of the irrigation system for which they are responsible.	All key staff reach irrigation training standard. No major and no more than 5 minor staff related irrigation incidents per year.	There is one permanent and one casual staff member on the property. Day to day management of the irrigation system is Andrew's call. Weekly tour of every paddock on farm with grain agent, Andrew and permanent staff member. As a result individual staff training not required. No major staff related irrigation incidents reported this year. Two minor incidents recorded. Appropriate corrective actions put in place.	✓				Staff training records
Objective 4: To maximise water application effectiveness while minimising excess drainage and runoff.	Soil moisture levels between field capacity and recharge level 85 % of time. Regular distribution efficiency of 80 % or better achieved.	Soil moisture probe used to check soil moisture status. Advice on what is required is received from Hydro-services personnel. In addition advice is received from the Grain agent who inspects the crops on a weekly basis during the season.	✓				Stated practice and Hydro-Services records.

² FCom – Fully compliant; CoCA – Compliant with corrective actions; CoCF – Compliant with future actions; NCom – Non compliant.

Objectives	Targets	Progress made	FCom ²	CoCA	CoFA	NCom	Verification
Objective 5: To implement a robust irrigation equipment and machinery maintenance system	No major and no more than 5 minor mechanical failures each year caused through inadequate maintenance.	The Turbo-Rainer is serviced at the end of each season. The Pivots and laterals receive a by-annual service. Records kept of pivot and lateral servicing. No major or minor mechanical failures recorded during the season due to lack of machinery maintenance.	✓				Stated practice and machinery records.

Best management practices	
Have all the best management practices been used? If not why not?	Yes
Have any BMPs been rejected in the plan. (i.e. inappropriate?)	No
Have any new BMPs been introduced that are not recorded in the plan?	No
Monitoring	
Do the records identify progress or deficiencies in meeting the stated objectives and targets?	Yes
Were the records easily located, understandable and complete?	Good records are kept of all irrigation operations.
Corrective actions	
If the objectives/targets have not been met what corrective actions have commenced?	Not applicable. All targets met
Are these actions working? If not why not? What further steps are planned?	Not applicable.

Management area: Soils management

Note: A separate sheet should be used for each management area.

Objectives	Targets	Progress made	FCom ³	CoCA	CoFA	NCom	Verification
Objective 1: To minimise the incidence of wind and/or water erosion caused as a result of farming practices.	No major and no more than 2 minor erosion incidents.	No erosion incidents recorded. Note: The risk of erosion is very low on this property.	✓				Stated practice and field observation.
Objective 2: To optimize soil structure and soil biological activity	Maintained or improving soil health index results.	Stubble is incorporated back into the soil. Rotations are varied and holes are dug on a regular basis to check the soil condition. However, soil health index tests not undertaken to date.				✓	Non-compliant as insufficient records available to verify compliance. Best practices implemented would suggest that objective achieved. Amendment of the target may be appropriate.
Objective 3: To minimise the risk of soil contamination from fertiliser inputs.	100% Fertmark compliant products used	Only Ravensdown and Ballance fertilisers. All are Fertmark compliant.	✓				

Best management practices	
Have all the best management practices been used? If not why not?	Yes
Have any BMPs been rejected in the plan. (i.e. inappropriate?)	No
Have any new BMPs been introduced that are not recorded in the plan?	No
Monitoring	
Do the records identify progress or deficiencies in	Crop records are kept in a farm diary although limited data is recorded which is relevant to the targets above.

³ **FCom** – Fully compliant; **CoCA** – Compliant with corrective actions; **CoCF** – Compliant with future actions; **NCom** – Non compliant.

meeting the stated objectives and targets?	
Were the records easily located, understandable and complete?	Yes
Corrective actions	
If the objectives/targets have not been met what corrective actions have commenced?	Not applicable.
Are these actions working? If not why not? What further steps are planned?	Andrew is planning to introduce a system of soil health index testing. Nothing has been introduced to date.

Management area: Nutrient management

Note: A separate sheet should be used for each management area.

Objectives	Targets	Progress made	FCom ⁴	CoCA	CoFA	NCom	Verification
Objective 1: To minimise nutrient losses to surface and ground water through the use of nutrient budgeting and deep soil nutrient testing.	Nutrient budgets reviewed and revised every two years. Nitrate leaching and/or runoff losses not to exceed 25 kgN/ha	Nutrient budget not used to date because of deficiencies in nutrient budget model.			✓		Stated practice
Objective 2: To minimise nitrate leaching and/or run-off losses to surface and ground water through careful fertiliser management.	Maximum rate per application – 80 kg/ha Close adherence to listed best management practices. Significant variations noted together with reasons for variations.	Application rates varied according to crop requirements. Soil testing and plant analysis undertaken. FAR data and advisor's recommendations considered in decision making. Close adherence to listed BMPs	✓				Stated practice. Soil and plant analysis sheets. FAR and advisor recommendation sheets.
Objective 3: To minimise phosphate run-off losses to surface water through careful fertiliser management.	Close adherence to listed best management practices. Significant variations noted together with reasons for variations.	Close adherence to listed BMPs	✓				Stated practice
Objective 4: To apply nutrients where needed to maximise impact and minimise losses to non target areas.	Close adherence to listed best management practices. Significant variations noted together with reasons for variations.	The risk of application to non-target areas is very low on this property. Close adherence to listed BMPs	✓				Stated practice and field observation

⁴ **FCom** – Fully compliant; **CoCA** – Compliant with corrective actions; **CoCF** – Compliant with future actions; **NCom** – Non compliant.

Best management practices	
Have all the best management practices been used? If not why not?	Yes
Have any BMPs been rejected in the plan. (i.e. inappropriate?)	No
Have any new BMPs been introduced that are not recorded in the plan?	No
Monitoring	
Do the records identify progress or deficiencies in meeting the stated objectives and targets?	Yes
Were the records easily located, understandable and complete?	Yes. Good records kept for all crops.
Corrective actions	
If the objectives/targets have not been met what corrective actions have commenced?	Plans are in place to have a nutrient budget completed for the property within the next 3 months.
Are these actions working? If not why not? What further steps are planned?	Not applicable

Management area: Collected animal effluent management

Note: A separate sheet should be used for each management area.

Objectives	Targets	Progress made	FCom ⁵	CoCA	CoFA	NCom	Verification
Objective 1: To comply with all Regional Council requirements relating to effluent management and disposal	Full compliance with consent and/or permitted activity requirements						Resource consent held by the neighbour.
Objective 2: To ensure all key staff members are fully trained in the operation and maintenance of the effluent application system.	All key staff pass effluent management training course with merit. No major and no more than 2 minor staff related effluent management incidents per year.	Not applicable. Pig effluent applied by neighbour using a muck spreader. No major or minor incidents have occurred in the past 12 months.	✓				Stated practice
Objective 3: To implement a robust equipment and machinery maintenance programme.	No major and no more than 2 minor breakdowns caused as a result of inadequate system maintenance.	No major or minor incidents have occurred in the past 12 months.	✓				Stated practice
Objective 4: To minimise the volume of effluent produced	Demonstrated close adherence to listed best management practices						This objective is not applicable for this property.
Objective 5: To ensure that the effluent system is set up to minimise the risks associated with effluent disposal.	System evaluation undertaken by August 2009 All upgrades completed no later than six months after receipt of the system evaluation report.						This objective is not applicable for this property

⁵ **FCom** – Fully compliant; **CoCA** – Compliant with corrective actions; **CoCF** – Compliant with future actions; **NCom** – Non compliant.

Objectives	Targets	Progress made	FCom ⁵	CoCA	CoFA	NCom	Verification
Objective 6: To avoid contamination of groundwater and surface water	Degree of adherence to listed management practices Designated disposal area marked on map with high risk areas identified. Return period of an annual application	The pig effluent can potentially be spread over the whole property. All areas of equal risk. Effluent normally only spread on a particular block once per year.	✓				Stated practice
Objective 7: To Implementing specific procedures for dealing with leakage or spillage from any part of the disposal system.	100% adherence to the procedures	Not applicable. Pig effluent applied by neighbour using a muck spreader.					

Best management practices	
Have all the best management practices been used? If not why not?	Yes
Have any BMPs been rejected in the plan. (i.e. inappropriate?)	No
Have any new BMPs been introduced that are not recorded in the plan?	No
Monitoring	
Do the records identify progress or deficiencies in meeting the stated objectives and targets?	Verification mostly based on stated practice. The keeping of record of effluent application by block would be beneficial.
Were the records easily located, understandable and complete?	Not applicable
Corrective actions	
If the objectives/targets have not been met what corrective actions have commenced?	Not applicable
Are these actions working? If not why not? What further steps are planned?	Not applicable

Management area: Biodiversity and ecosystem management

Note: A separate sheet should be used for each management area.

Objectives	Targets	Progress made	FCom ⁶	CoCA	CoFA	NCom	Verification
Objective 1: Maintain native plants and animals and their habitats	100% protection of moderate and high value biodiversity sites. Where this is not practical an equivalent offset area will be established.	No high value biodiversity sites have been identified on the property.					
Objective 2: To enhance shelter and habitat	At least 100 m ² of habitat or shelter planting per year	An extensive network of shelter trees has been planted throughout the property. The planting programme is on-going.	✓				Field observation and stated practice

Best management practices	
Have all the best management practices been used? If not why not?	Yes
Have any BMPs been rejected in the plan. (i.e. inappropriate?)	No
Have any new BMPs been introduced that are not recorded in the plan?	No
Monitoring	
Do the records identify progress or deficiencies in meeting the stated objectives and targets?	Yes
Were the records easily located, understandable and complete?	Yes. Most field observation.
Corrective actions	
If the objectives/targets have not been met what corrective actions have commenced?	Not applicable
Are these actions working? If not why not? What further steps are planned?	Not applicable

⁶ **FCom** – Fully compliant; **CoCA** – Compliant with corrective actions; **CoCF** – Compliant with future actions; **NCom** – Non compliant.

Audit conclusion

Has the farm reached the necessary standard⁷ of environmental management?

Yes Yes subject to the presentation of further evidence to verify compliance No

The evidence required relates to the following objectives and targets.

Soils management

Objective2:

To optimize soil structure and soil biological activity. Maintained or improving soil health index results.

Nutrient management

Objective 1:

To minimise nutrient losses to surface and ground water through the use of nutrient budgeting and deep soil nutrient testing. Nutrient budgets reviewed and revised every two years.

Signed off _____ Auditor

Date audit completed: 04 / 06 / 2009

Additional evidence presented

Sufficient evidence presented to verify compliance for all activities originally assessed as non-compliant?

Yes No

If no, what actions are needed for the farm to be likely to succeed at a subsequent audit?

⁷ **Standard** –Compliant ratings received for all NOIC and regulatory requirements, and listed management policies.