

PREPARING FOR A FARM ENVIRONMENTAL AUDIT

Megan Hands
Irrigo Centre Limited

Abstract

With increasing expectations to demonstrate that we are operating our farms at good management practice (GMP), Farm Environment Plans (FEP) and Farm Environmental Audits are fast becoming part of our on-farm vocabulary.

In Canterbury, FEPs and Audits form a key component of our regulatory and industry framework. But if you're not in Canterbury don't switch off! With changes to council regulations throughout New Zealand, and greater demand to prove to our consumers we are operating at good practice, it's safe to say they're here to stay in one form or another.

Farm Environment Plans are a risk management tool, they help us to identify environmental risks on farm, put a plan in place to address them and provide assurance to our regulators, customers and the public that we are doing the right things at the right time and are committed to making improvements where we need to. Farm Environmental Audits assess how we are tracking against the identified environmental risks and good management expectations set out.

The Canterbury context

In Canterbury, the Land and Water Plan (LWRP) requires FEPs to be implemented and audited on farm. Consent Conditions require that your FEP is audited within twelve months of consent being granted. Once audited the first time your grade will dictate the frequency of audits to take place.

FEP Audits do not replace effluent or irrigation consent monitoring normally undertaken by Environment Canterbury.

Notes:

I'm not in Canterbury?

All over the country, Regional Councils are taking steps to introduce FEP's in various forms as part of their packages to implement the National Policy Statement for Freshwater Management.

- Southland – New water and Land Plan requirement to have a farm management plan with variations of consenting regimes according to physiographic zones. You must farm in accordance with the management plan and provide it to Environment Southland on request.
- Otago – Nutrient limits coming into force, but no formal management plan in place yet.
- Waikato, Horizons and Hawkes Bay Regions are also in the process of designing FEP requirements.

You might not be required to have your farm environment plan audited just yet, but the council may eventually want to check that you're operating in accordance with your management plan or your supply company might start to ask questions. All indications are that the public, the regulators and our consumers have increasing interest and expectations of what is going on inside our farm gates. My advice would be to start or continue a culture of operating at Good Management Practice and record keeping now so that if/when requirements evolve in your region you are ahead of the game. Don't lost sight of the fact that Good Management Practice is Good Business Practice.

Canterbury FEP audit regime

Who are the auditors?

Certified FEP Auditors are independent consultants and are not employees of Environment Canterbury. You will need to select and book in an auditor yourself unless your scheme or collective is managing this for you. The current group of certified auditors are a mixture of farm and resource management consultants.

Certified FEP Auditors are required to:

- Have 5 years' farm systems experience - either on farm or in a consultancy role
- Have completed both Overseer Courses - Intermediate and Advanced
- Have completed training and certification assessments through Environment Canterbury
- Be a member of a professional organisation such as NZIPIM.

Audit grades and frequency

Within Environment Canterbury's FEP Audit system, audit grades are not strictly pass or fail but are graded based on an A, B, C or D grade. Most consent conditions for individuals do however require an A or B grade to be achieved to maintain compliance.

A- Operating at GMP or above for all management areas

B- On Track

C- Off Track to meet GMP

D- Low confidence of meeting one or more GMP objectives.

After the first audit, the timing of your next FEP audit is dependent on the grade you achieve.

A- Re-audited in 3 years, or 4 years if within an irrigation scheme or collective

B- Re-audited in 2 years

C- Re-audited within 12 months,

D- Re-audited within 6 Months

A change in land use or management will also trigger a new audit.

What is the auditor grading you against?

There are the base set of objectives and targets that the FEP Auditor is grading you on during your FEP audit which align with the targets, objectives and actions you have set out in your Farm Environment Plan.

The base set of objectives and targets audited against are set out as an appendix to this paper. Your consent or irrigation scheme may have added or removed other objectives and targets to be included in your FEP.

The objectives and targets are related to the Good Management Practices specified in the booklet of industry agreed good management practices and are specified in the schedule attached to your consent. The auditor will only audit against the objectives and targets that are relevant for your farm.

Notes:

Compliance/good management interface

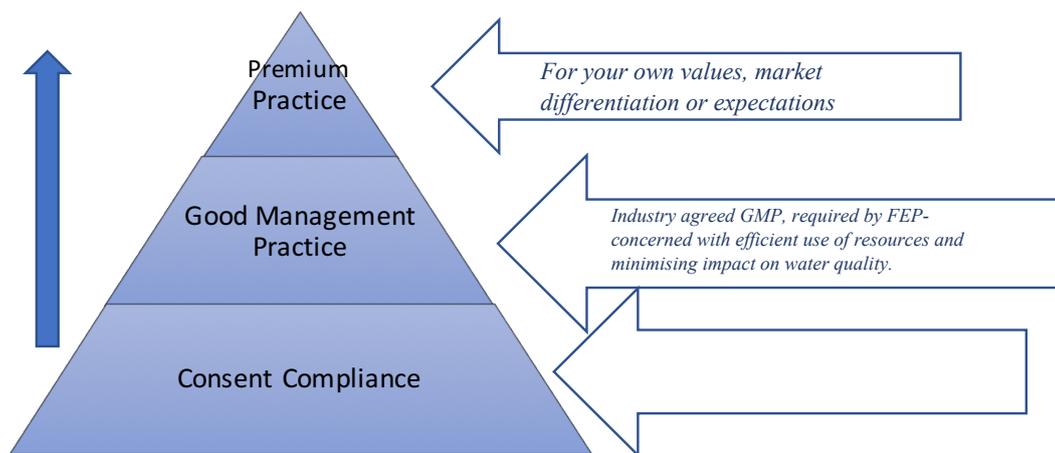


Figure 1. Compliance & Management Practice Hierarchy

Farm Environment Plan auditors are not warranted compliance officers and are not on farm to determine compliance, rather to assess whether you are operating at GMP. FEPs and audit expectations are raising the bar of expectation and while you could lump them in together, there are some key differentiations when it comes to audits. Compliance is the bare minimum requirement usually required by your existing consents. Good Management may require more than the bare minimum.

For example, an existing effluent consent granted 10 years ago may only require 5 days effluent storage to be marked compliant in your effluent inspection, but good management practice requires that effluent systems are designed and managed to be able to comply 365 days a year and sufficient and suitable storage must be available to store effluent and any wastewater when soil conditions are unsuitable for application. So, you may have been marked compliant – meeting the bare minimum- in your effluent inspection but not be meeting the standard for good management practice with respect to your Farm Environment Plan audit.

What do you need to provide the auditor prior to your audit (outside of scheme farms)?

- A copy of or access to your Farm Environment Plan
- Your nutrient Budget- xml file. This is your overseer file, ask your nutrient management advisor to send it if that's easier
- Copies of your consents - Irrigation, effluent, land use
- Any Health and Safety and Biosecurity Requirements
- Any previous audit reports and action plans

If you're with an Irrigation scheme with a Land Use Consent, your scheme environmental manager will advise you when booking an audit.

What do I expect on the day of the audit?

An FEP audit for a dairy farm should be expected to take 2-3 hours on farm. This will consist of time around the dining table or in the office and time looking around the farm. Every auditor will have a slightly different style as to which parts they like to do first but the information they're looking for is the same.

If you're a lessee, a Sharemilker/ contract milker or manager, it may be useful to think about your farm owner/operations manager being at the audit. The auditor is interested in speaking to the person who is responsible for the day to day management of the farm in accordance with your FEP, but will also want to look at and talk about whether farm infrastructure is fit for purpose it is useful to have the right people in the room for those conversations.

Demonstrating that you're operating at good management practice - the prove-it-factor

When the auditor comes to see you, they're undertaking what is called a Level of Confidence Assessment. Sounds a bit eerie fairy, but in basic terms the auditor is asking, how confident am I that this farm is achieving or working towards the required good management practice objectives and targets?

Level of confidence assessments are based on assessing the likelihood that each objective and target is being met. The auditor needs to consider whether there are systems and processes in place that effectively manage on farm environmental risks, whether you meet the GMP standards and whether you meet the nutrient limit set in your consent.

For each target and objective, the auditor needs to see objective evidence and provide reasons for and against their level of confidence assessment in their report. The auditor is required to grade each objective and target either a High, Medium or Low. The number of highs, mediums and lows add up to your audit grade with Objectives graded according to the

Notes:

number of highs and lows at the target level. Any Low at the Objective level = a D grade, highlighting the importance of ensuring you're operating at good management across each of the management areas.

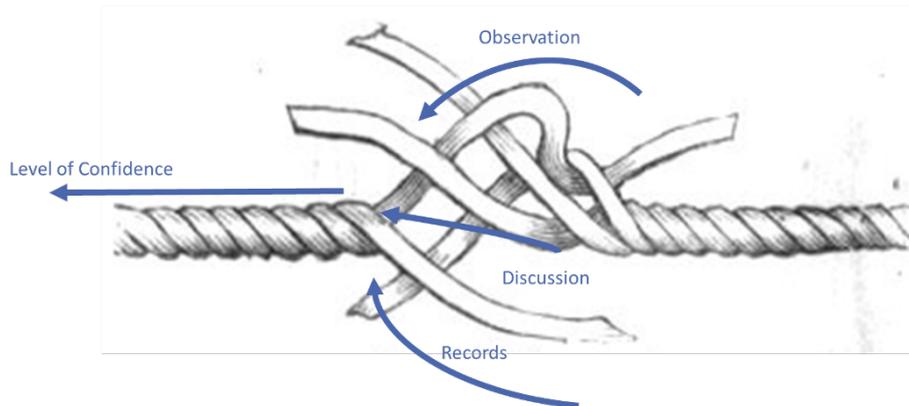


Figure 2. The strands that build level of confidence.

As illustrated by the string in Figure 2, the auditor needs to combine what they are observing, the discussion that they have with you during the audit and the records that you have kept and provided to build their level of confidence assessment. Each component provides strength to confidence.

Examples of evidence include:

- Operating procedures
- Fertiliser/effluent records
- Staff training
- Well maintained infrastructure/maintenance and calibration records.

A list of examples of records to keep for evidence are included in Appendix B of this paper.

Hot tips

- Get yourself on board. Understand the Why, understand what the requirements are before the auditor shows up.
- Read your FEP; understand what is in it. Put yourself in the auditors' shoes.
- Get your team on board - give them tasks, involve them in your FEP Actions, build a culture of implementing Good Management Practice.
- Ask yourselves the question, "Can I Prove I am Doing a Good Job for the Environment?"
- Systems and Processes.
- Keep Good Records.

- Ensure your nutrient budgets are prepared by someone who is suitably qualified and experience in preparing compliance nutrient budgets and understand what the nutrient budget is telling you.
- Good Management Practice is good business, tackle these requirements with a good management attitude rather than a compliance attitude and it will be much easier to get yourself and your team on board.

Key take homes

- Seek advice/help where you need it - there is a lot of support out there.
- It gets much easier when you understand what is expected.
- Keeping good records and systems and processes in place is key to providing evidence you are operating at, or working towards, good management practice.

Follow up self-assessment activity before your next FEP audit

Go through the list of objective and targets in Appendix A and think about what evidence you would be able to provide. A useful resource for doing this quickly is the Dairy NZ Good Management Practices Guide, this booklet has tick boxes of examples of GMPs and the evidence you might provide.

Notes:

Appendix A - Objectives and targets graded

What is the auditor grading you against?

These are the base set of objectives and targets that the FEP Auditor is grading you on during your FEP audit. Your consent or irrigation scheme may have added or removed other objectives and targets to be included in your FEP. The auditor will only audit against the objectives and targets that are relevant for your farm.

Below are the standard objectives and targets present in the auditor template as of 6/6/2017.

Irrigation management area

- Objective: To operate irrigation systems efficiently ensuring that the actual use of water is monitored and is efficient.
- Target 1. New irrigation infrastructure is designed, installed and operated in accordance with industry best practice standard.
- Target 2. Existing irrigation systems are maintained, calibrated, and operated to apply irrigation water at the optimal efficiency.
- Targets 3 & 4 All applications of irrigation water are justified on the basis of soil moisture data, climatic information and crop requirements.

Nutrient management area

Nutrient budget robustness check

Nutrient Budget: Nutrient Budget Robustness Check. The FEP auditor will go through your nutrient budget to ensure that the budget has been prepared by a suitably qualified person, that the input standards have been followed and that there are no discrepancies or inconsistencies within the nutrient budget. This is just one part of the FEP Audit. Your consent or irrigation scheme will have a Nutrient Loss number that you need to comply with. Your Nutrient budget will be compared against this to see if it meets your consented Nutrient discharge allowance.

The auditor is required to undertake a robustness check of the nutrient budget for the property, which includes the following checks. Overall, the checks are to determine whether the farm system operated aligns with what has been modelled, and that the modelling undertaken

has followed the best practice input standards.

<u>Assessment of Nutrient Budget Robustness Checklist – Irrigo Scheme Programme</u>		
	Yes/No	Comments/observations
Budget Type/ Budget Prepared by:		
Version		
Has the budget been prepared using the latest (correct) version of the Best Practice <u>Data</u> Input Standards?	Choose an item.	
Block areas especially effluent block areas consistent with FEP?	Choose an item.	
Irrigation areas and type	Choose an item.	
Fertiliser application rates and location	Choose an item.	
Stock numbers and types	Choose an item.	
Areas in crop.	Choose an item.	
Scheme N Loss Classification	Choose an item.	
Are the following sensible:		
Inputs/outputs		
Irrigation inputs reconcile with water use?		
PAW consistent with FEP Maps		
Production data consistent with FEP/ Farmer reported?		
Pasture Growth/ Crop yields Consistent with farmer reporting/ records?		
Overall risk to environment/ points for discussion		

Nutrient management practices

- Objective: To maximise nutrient use efficiency while minimising nutrient losses to water.
- Objective/Target 1. Nitrogen losses from farming activities are at or below Good Management Practice Loss rates for the property.
- Target 2. Phosphorus and sediment losses from farming activities are minimised.
- Target 3. The amount and rate of fertiliser applied do not exceed the agronomic requirements of the crop.

Notes:

Soils management area

- Objective: To maintain or improve the physical and biological condition of soils in order to minimise the movement of sediment, phosphorus and other contaminants to waterways.
- Target 1. Farming activities are managed so as to not exacerbate erosion.
- Target 2. Farming practices are implemented that optimise infiltration of water into the soil profile and minimise run-off of nutrients and sediment.

Collected animal effluent area

- Objective: To manage the risks associated with the operation of effluent systems to ensure effluent systems are compliant **365** days of the year.
- Target 1. Effluent storage facilities and effluent discharges **comply with regional council rules** or any granted resource consent.
- Target 2. The timing and rate of **application of effluent** and solid animal waste to land is managed so as to minimise the risk of contamination of groundwater or surface water bodies.
- Target 3. Sufficient and suitable storage is available to store effluent and any wastewater when soil conditions are unsuitable for application.
- Target 4. Staff are trained in the operation, maintenance and use of effluent storage and application systems.

Management area water body - riparian drains, rivers, wetlands, lakes

- Objective: To manage wetlands, riparian areas and surface water bodies to avoid damage to the bed and margins of a water body, and to avoid the direct input of nutrients, sediment, and microbial pathogens.
- Target 1. Stock are excluded from water bodies in accordance with regional council rules or any granted resource consent.
- Target 2. Vegetated riparian margins are maintained to minimise nutrient, sediment and microbial pathogen losses to water bodies are minimised.
- Target 3. Farm tracks, gateways, water troughs, self-feeding areas, stock camps wallows and other sources of sediment, nutrient and microbial loss are located so as to minimise the risks to surface water quality.

Management area - point source - offal pits, farm rubbish, silage pits etc.

- Objective: To manage the number and location of pits to minimise risks to health and water quality.

- Target 1. All on-farm silage, offal pit and rubbish dump discharges are managed to avoid direct discharges of contaminants to groundwater or surface water.
- Non- Irrigation Water Use
- Objective: To use water efficiently ensuring that actual; use of water is monitored and efficient.
- Target 1. Actual water use is efficient for the end use.

Notes:

Appendix B

FEP records/evidence checklist

During your FEP audit, the auditor needs to undertake a level of confidence assessment to determine where you are at with achieving the required good management practice targets and objectives. In order to undertake this assessment, the auditor needs to view evidence of your practices on farm.

This is not an exhaustive list, nor is it imperative that you have every individual item on the list available. However, you should be prepared to give sufficient evidence to the auditor for each of the objectives and targets from the records you have available.

FEP actions:

- Date completed, who was responsible
- Evidence action was undertaken (e.g. receipts, photos etc)
- Evidence progress has been made to achieve actions

Irrigation:

- DIY Maintenance records (e.g. <http://irrigationnz.co.nz/news-resources/irrigation-resources/irrigation-system-checklist/>)
- Maintenance receipts/register
- If complaint has been received, proof issue has been addressed
- Winter servicing invoice
- Bucket/uniformity test results
- Soil moisture (measurements or budgeting)
- Soil temperature, rainfall, PET
- Staff training/induction records
- Irrigation application depths/timing
- Code of Practice Certificate, system design, irrigation system evaluation and Commissioning reports
- Events log (e.g. noted water irrigating road/leaky seal and what you did to fix it)

Fertiliser/Overseer:

- OVERSEER nutrient budget or other N calculation model
- Date, time, location, type and rate of fertiliser application per nutrient budget block
- Soil test results
- GPS fertiliser tracking records (ground and aerial applications)
- Spreading calibration and maintenance records (if you spread yourself)

- Stock type/numbers/ages/weights (numbers averaged per month)
- Nutrient management plan /agronomist recommendations
- Type and area of crop, how/when cultivated, how/when harvested, yields
- Imported and exported supplementary feed (type/amount)
- Milk production (kg MS/season)

Effluent:

- Effluent management plan
- Application depth, location and time of liquid and solid effluent applications
- DIY maintenance records
- Maintenance receipts
- Bucket/calibration tests
- Backflow prevention test results
- Staff training records
- Dairy NZ WOF
- Dairy Effluent Storage Calculator and/or effluent pond design specifications
- Events log

Biodiversity/waterways/soils:

- Riparian planting plan
- Evidence of good practice which cannot be seen
- Receipts for planting/fencing/troughs

Notes: