Verifying water take provides peace of mind

When it comes to sticking to his consented water take and proving that he's done so, Carterton farmer and irrigator Duncan McGregor sleeps well at night.

New regulations introduced in 2010 under the Resource Management Act require water meters to be independently-verified to make sure they are accurately measuring volumes of consented water used by irrigators.

The 183-hectare McGregor property, 'Ahiaruhe' is mainly used for cropping in the summer, together with lamb and cattle trading in winter. 130 hectares are irrigated, mainly during December and January to grow wheat, barley and peas.

When he commissioned a new irrigation system in 2013, Duncan installed a digital water meter, data logger and computer controller that enables him to record exactly how much water is being used and when. This new technology allows him to easily comply with new verification rules, and gives peace of mind that the system is operating within consent conditions at all times.

"I wanted to do it once and do it properly," says Duncan. "I've paid for a hi-tech system that has a 30-year life span which I see it as an investment. It manages and controls water use by computer so that it can't exceed the consented take. Basically it means that I don't have to worry. If anything goes wrong I would know about it pretty quickly and can get on top of it straight away."

Local Carterton firm G V Electrical & Pumping installed the new irrigation system. They also provide the verification service required by the regulations. The company is accredited by Irrigation New Zealand as one of 37 'Blue Tick' providers nationally.

Accredited companies install, verify and provide data management services that comply with the NZ Water Measurement Code of Practice and the Resource Management Act Regulations 2010. This provides water consent holders with the confidence that they are getting well-qualified, reputable and quality water meter verification services.

Kerry Hare of G V Electrical & Pumping (left) conducts a verification test on Wairarapa arable farmer Duncan McGregor's water metering system.

GVE managing director Gordon Mouldey says the digital metering system is failsafe. "If a meter fails then the irrigation system stops – it's as simple as that. All water use data is recorded which is a good insurance policy because if there's an issue with the consent there is a clear and documented history of water levels during the pumping season.

"It's simple and hassle-free. If anything changes and more stringent controls are introduced, Duncan has all the information he needs to prove the water take is being used as it should. For example, having his own data on water levels in the bore means he can show the council or neighbours the records of the exact water levels over time.

VERIFICATION – WHAT'S REQUIRED?

By June 2017, all water takes greater than 5 litres per second need to be independently verified every five years. Implementation of the regulations has been staged, with water takes greater than 20 litres per second required to be verified by mid-2013 and takes of 10–20 litres per second verified by 2015.

Companies conducting the verification tests provides both the Regional Council and the client with a verification certificate.

For a list of accredited service providers in the Greater Wellington region, visit www.gw.govt.nz/water-takes-and-bores Further information is at www.irrigationaccrediation.co.nz/watermeasurement

Smart farming provides greater productivity with the same number of cows

Irrigation can help improve nitrogen efficiency, says South Wairarapa dairy farmer Vern Brasell.

Individual dairy farms have much to gain from irrigation, but an increase in the number of cows doesn't need to be among them.

South Wairarapa dairy farmer Vern Brasell believes the extra water from irrigation – if managed carefully – will lead to greater efficiencies and productivity from the existing herd.

And perhaps equally as significant, it can be achieved with a much smaller carbon footprint. Surely it is a win-win therefore for everyone?

Vern is a third generation dairy farmer and currently one of seven shareholders in Kaiwaiwai Dairy on SH53 between Martinborough and Featherston.

The area is considered "dry zone" and therefore has its own peculiarities. While there is existing irrigation on some of the Kaiwaiwai Dairy leased land, there is none on the main block. With higher grass growth in winter and low in summer, Vern split calves, calving cows in autumn and spring.

Kaiwaiwai is a successful operation employing six staff and two part-timers.

With irrigation, Vern has worked out that productivity at Kaiwaiwai would increase by 50kg of milk solids per cow across the 900-cow herd.

Such gains will largely be the result of improved feed quality and also the greater certainty around water allowing for longer milking lactation.

It would also mean more spring calving was possible, therefore less in autumn which would be better for the soils, he says.

Other savings would be made through less feed supplement having to be brought in, which lessens the carbon footprint.

It would also allow for a wider range of crops to be grown and new grasses and clovers to be retained longer.

A member of Sustainable Wairarapa, Vern has a strong interest in climate change and believes we all need to worry about it. However, with good practices, farmers can play their part in slowing down the pending impacts of climate change.

Decisions around feed, genetics, animal health, manure management can help to reduce green-house gas emissions. Vern calls it "smart productive farming" and critical to enabling it to work more efficiently is access to more water. Simply, irrigation will improve nitrogen efficiency because it enables you to grow more grass, he says. For example, putting more water on the soil increases the level of plant activity which increases the level of carbon in the soil therefore improving nitrogen efficiency.

Vern's principles are something that Kiwi dairy farmers can learn from and his farming practices, if applied to all farms, would change the industry.

The current average Overseer range of nitrate leaching in Wairarapa is 34kg/ha/year, while Kaiwaiwai's level is 12kg.

Kaiwaiwai has an effluent treatment system which increases water efficiency and reduces the amount of nitrogen leaching. In addition, a manmade wetland also reduces nitrogen leaching to around the same extent as the effluent system, but at only a tenth of the cost.

Last year, Kaiwaiwai won an award from the Morgan Foundation, for their part in the Wairarapa Moana wetlands project.

Farmer input sought for Wairarapa irrigation scheme

Investigations into the proposal to store water for irrigation and other uses in Wairarapa is progressing well.

Understanding potential farmer demand and uptake rates is a critical component of the work that is being done.

A survey of farmer interest will be an opportunity for individual farmers to have greater input into the project which will ultimately influence outcomes around the cost of water and ownership structure of the scheme.

Water Wairarapa project director Michael Bassett-Foss says the survey will provide additional verification of what the project team has already learnt through their farmer database and engagement methods.

The timing of the survey has been staged to follow financial modelling work. Now that the project's commercial advisory firm, Lewis Tucker Limited, has completed an initial version of the financial model, results from the survey can be fed into it to give some clarity around the cost of water.

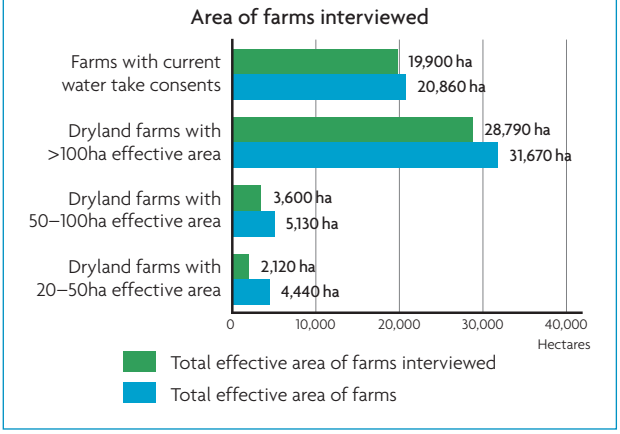
Many farmers in the proposed scheme's broad supply area have already been interviewed by members of the Water Wairarapa project team.

Greg Ordish and Duncan Didsbury have been conducting one-on-one farmer interviews in several iterations since 2012. Initial interviews focused on the larger and more accessible farms. Successive iterations of farmer interviews have filled gaps, interviewing farmers that had previously not been interviewed and progressively confining it to the possible command area.

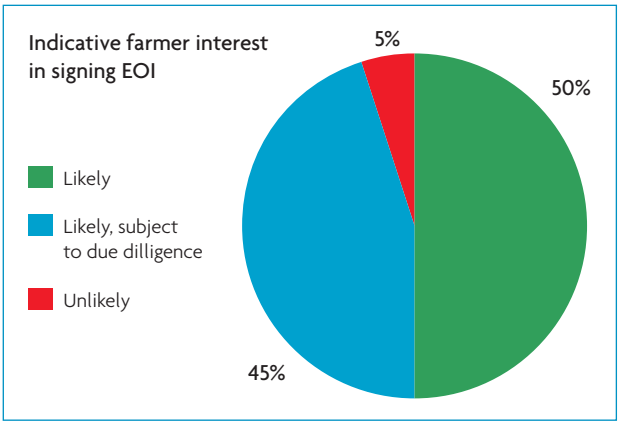
The focus of current one-on-one interviews has been to complete meetings with as many farmers as practical in the command area. The aim is to ensure that the information gathered from farmers is as representative of farmer feedback as possible.

To date the number of farmers interviewed equates to around 90 per cent of the land in the scheme's broad supply area, with feedback favourable (see graphs).

Currently around 12,000 hectares of Wairarapa land is irrigated. It is estimated that this could increase by about 30,000 hectares, depending on feedback from farmers.



Area of farms interviewed.



Indicative farmer interest in signing Expression of Interest (of the farmers interviewed).

IN BRIEF

FINANCIAL MODELLING

Water Wairarapa has engaged Lewis Tucker Limited as commercial advisors for the current stage of the project. Their first task has been to develop a financial model for the schemes. This will allow the team to consider the impact various key parameters will have on water prices, such as financing structure, investor mix and rates of return, farmer investment and water reliability. The initial model has been constructed and will undergo verification and scenario testing during August and September.

COUNCIL SUPPORT

The three Wairarapa district councils continue to be supportive of the Water Wairarapa project. Project director Michael Bassett-Foss says this demonstrates the councils' desire to see the project become a reality assuming it stacks up from the community perspective. Recently Masterton, Carterton and South Wairarapa District Councils provided funding totally $35,000 to assist investigations specific to their areas of interest, that are not already funded. The councils also provide valuable input through WW's Governance, Leadership and Stakeholder Advisory Groups.

CLIMATE CHANGE PROJECTIONS

The recently released publication "Climate Change Projections for New Zealand" highlights the relevance of the work being done on a possible water storage scheme in Wairarapa. In summary, drought intensity and frequency is predicted to be one of the most severe challenges that will be noticed especially on primary production. The effects of climate change will be important both in terms of the supply of and the demand for Wairarapa's water. Therefore the reports projections are important as to how the project best captures water and meets the demand for water on the valley floor.

www.waterwairarapa.co.nz

Water Wairarapa is led and funded by GWRC with assistance from the Ministry for Primary Industries.

Water Wairarapa
Securing a sustainable future

Water quality report card 'good' for Wairarapa

Water quality – what we have, what we need and what we want for economic, recreational and cultural use is being widely discussed in Wairarapa and across the country. Greater Wellington Regional Council's recently released annual regional 'water quality report cards' shows Wairarapa's water quality was generally good for swimming last summer, but that there is room for improvement.

GWRC monitoring is undertaken in line with national guidelines. Overall grades are based on assessment of the catchment area for sources of faecal contamination (agricultural run-off, storm water discharges or large waterfowl populations) and monitoring results from the previous five summers.

GWRC Senior Environmental Scientist for Aquatic Ecosystems and Quality, Summer Greenfield, says in Wairarapa only one of the 289 samples taken last summer did not meet national guidelines for safe swimming.

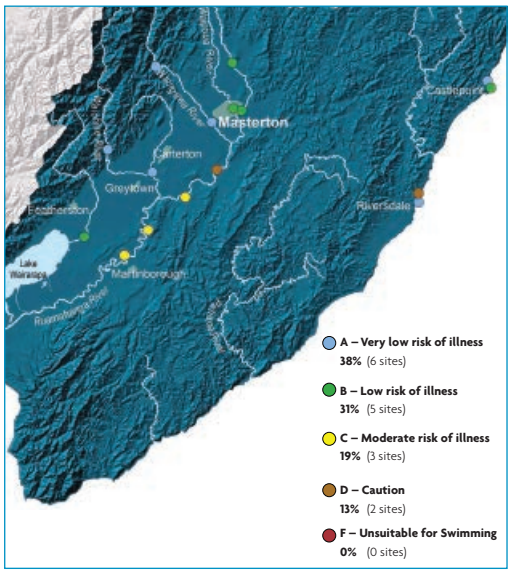
"Most of the swimming spots we monitor in Wairarapa have good water quality," she says. "The best sites are on the Waingawa, Waiohine rivers and Castlepoint and Riversdale Beaches, which all had 'A' grades meaning there is a very low risk of getting sick from being in the water."

"The worst sites were the Ruamahanga River at the Cliffs and Riversdale Lagoon, which had a 'D' grade meaning there is an increased risk of becoming ill from swimming than sites with a higher grade."

Treated sewage from the township of Masterton is the main reason for the 'D' grade at Ruamahanga River at 'The Cliffs'. Sites downstream of sewage discharges are given a cautionary grade even if the *E. coli* count is low. The *E. coli* measure is not as conclusive downstream of a sewage treatment plant as the treatment process does not remove all pathogens, such as viruses that make people sick, from discharged water.

Riversdale Lagoon which also rated 'D' is likely to be affected by runoff from rural land.

As a rule, water quality is most likely to be affected during, and up to 48 hours, after rainfall, but sites graded poor are also more likely to be unsafe for swimming during dry weather.



Cyanobacteria (toxic algae) was a concern, primarily for dog owners, especially in the Waipoua River over the summer.

The report can be viewed at: www.gw.govt.nz/assets/Our-Environment/Environmental-monitoring/Environmental-Reporting/2015-16-Rec-WQ-Report-Card-for-WairarapaWEB.pdf

Support creates good environmental outcomes

Working with landowners towards sustainable management practices is the key principle underpinning Greater Wellington Regional Council's Farm and Environment Plan (FEP) programme. GWRC advisors offer free planning and advice that complements farmers' knowledge and their work with other industry advisors. FEPs guide landowners through some of the complexities of managing an agri-ecosystem, builds their knowledge of natural resources and guides them towards grant assistance for projects that support good environmental outcomes.

GWRC has been working with hill country sheep and beef farmers since the late 1950's with soil conservation plans. This support expanded to create plans to assist intensive land users. The FEP programme, established in 2011, initially focussed on supporting intensive farmers in the Mangatere Valley, near Carterton. All dairy farmers in the area took up the opportunity. Now in its fifth season their have seen sixty FEPs developed for dairy, sheep and beef finishing and arable famers in Wairarapa and Kapiti. The programme has been extended across the region.

"The service has proved popular. Enquiries are largely from farmers who have heard about it from neighbours or farm discussion groups. Last year we began working in the lower Wairarapa Valley and we should see fifteen FEPs in South Wairarapa towards the end of the year," says Tony Faulkner, GWRC Team Leader Planning Services.

FEPs are living documents with a strong focus on creating an inventory of natural resources on-farm including waterways, soils, climatic conditions and land-use. The planning process expands the farmer's local knowledge and creates understanding about good on-farm practices from an environmental perspective, especially how their farm and practices interact with the river catchment they are working in. Advisors are able to help landowners understand the interactions of land and water locally without asking them to become expert hydrologists, as well as working with them on data that is relevant to their farm and supporting them with big picture issues such as climate change.

"Our programme captures information that is not often not documented on the farm. It is quite unique in the way it helps farmers understand the catchment and how their farm works as a natural resource, and the regulatory and non-regulatory implications. We all want long-term sustainable catchment water quality improvement and successful resilient agricultural businesses. FEPs can help join the dots."

FEPs can help farmers considering irrigation or reviewing existing practices.

"Farmers are well aware of the pressure on them towards efficient water use and the need for them to address any impact they might have on water quality. Because of the plan's flexibility we can tailor it to address specific farmer irrigation needs."