



Application Note

Irrigation Management Made Easy

Aquaflex Vineyard Irrigation Management

“We have been using Aquaflex on the vineyard for more than five years now. Aquaflex has become an essential tool to help with soil moisture management. It is easy to use. The data provided is easy to interpret and has proven to be very reliable.”

Lloyd Steffert Vineyard Manager, Waihopai Estates, Constellation NZ (formally Nobile Wine Group)

The wine world is becoming more discerning in its tastes. Customers are now far more focused on wine quality and many markets are interested in how the wine was produced.

One of the keys to future success is being able to show your customers how your wine was produced with sustainable and environmentally conscious practices.

The good news is these practices help produce good quality wine, protect the environment and save money.

A win-win situation!

In a vineyard situation water management is critical to achieving the viticultural outcomes that are desired.

The savings in water can be substantial without even considering the fact that you may be able to reduce the effects of too much vigor in the vines, and the cost savings of not having to deal with excess canopy growth.

Without soil moisture monitoring it is very difficult to determine the current soil water status and the actions that must be taken to induce enough stress to reduce the vegetative growth or control fruit size.

“Quality is not an accident; it is the result of intelligent thinking”

Barry Feickert, Redwood Pass Vineyard, Marlborough, NZ



The latest generation SI.95 Logging Sensor with radio telemetry fitted at Redwood Pass Vineyard, Marlborough, NZ.

A vineyard is a widely spaced row crop and as a result of this and the use of drip irrigation in most cases means traditional soil moisture sensors can struggle to characterise the soil water status due to the extremely variable soil water conditions.

This is where AQUAFLEX really comes into its own as the 3m long sensing strip helps integrate the water content along the row giving a very accurate picture of the irrigation requirements of the vines.



A typical installation in a vineyard consists of 1 or 2 sensors per site.

The diagram shows the main root zone sensor installed on a slope to integrate the water content both horizontally (down row) and vertically (over the root zone) to provide an easily interpreted number to make irrigation management decisions with.

The deeper (optional) horizontal sensor is often referred to as a 'check sensor' and has dual functionality.

- S** Firstly it can be used to make sure you do not over water. If placed below the main root zone at say 600mm (variety and soil dependent) it will show you if your irrigation is too heavy and pulses of water are moving past the lower sensor and therefore the bulk of the root zone.
- S** Secondly it can help monitor the onset of stress. As the water content is lowered in the main root zone the vine will start to extract water from lower levels in the soil profile. The lower sensor can be used to balance the stress imposed on the vine by allowing the viticulturist to monitor changes in extraction patterns from that depth

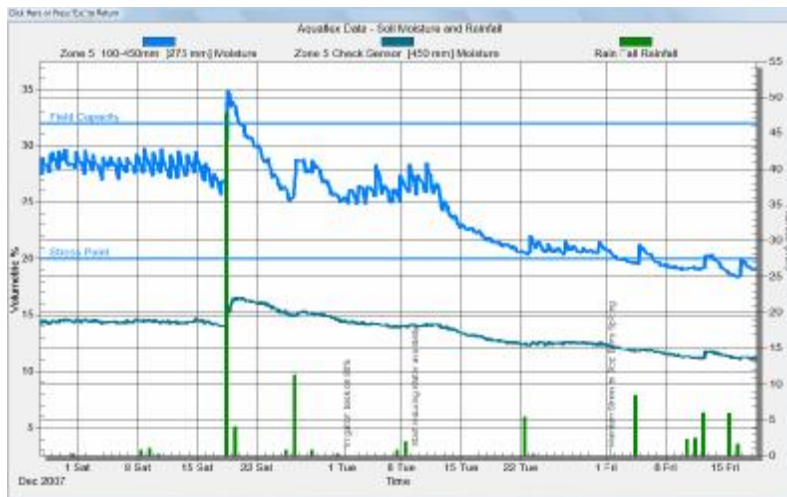
Spatial Averaging, Precision and Robustness
- three key attributes that put AQUAFLEX in a field of its own! -

Software Solution

AQUAFLEX software allows easy interpretation of the soil moisture and soil temperature data.

Points of interest like Field Capacity and Stress Point can be clearly marked on the graph. Irrigation, rainfall and notes can also be added to the database for completeness of the record.

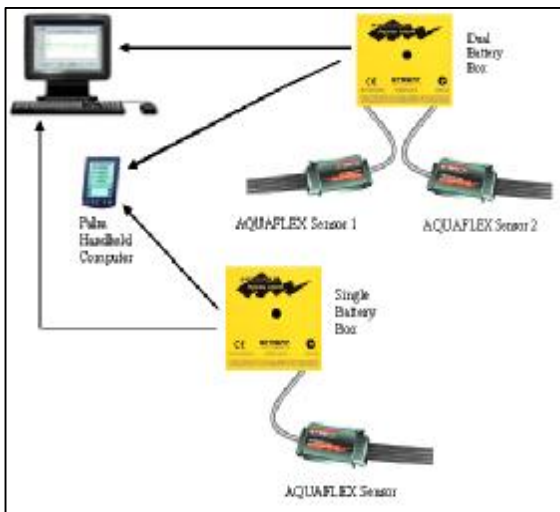
With the data stored in a database that is easily accessed through the graphical interface the power of the system to aid the viticulturist is increased year on year as data from previous seasons can quickly be accessed to compare with the current situation allowing the experiences of the past help improve decision making in the present.



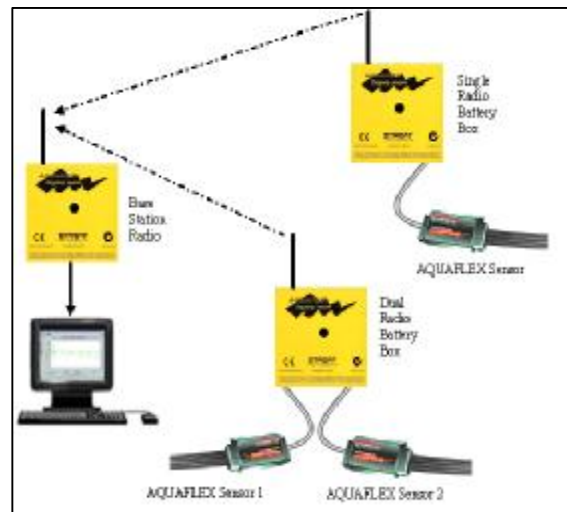
Communication options:

Multiple communication options exist, although two main configurations are most commonly deployed in the vineyard application.

The SI.95 Logging Sensor system in either Single or Dual Sensor is the basis of the system with local download using the Palm hand held computer or radio transfer of data directly back to the office PC. This option is being utilized by a growing number viticulturist, so that information is available when they need it.



Logging Sensor – Single or Dual



Logging Sensor - Radio



Barry Feickert and Bolly at Redwood Pass Vineyard, www.rpv.co.nz
(Source www.josephkelly.co.nz)

“With good monitoring equipment such as the AQUAFLEX sensor and software our results and developed knowledge have been spectacular. This is our single most important tool.”

Barry Feickert, Redwood Pass Vineyard, Marlborough, NZ

AIM



AQUAFLEX Irrigation Management
- Always on Target -

STREAT
INSTRUMENTS

Streat Instruments Limited
4A Expo Place
PO Box 24071
Christchurch
New Zealand



envirofactors

Envirofactors Limited
3 Water Lane
Bradford BD1 2JL
United Kingdom

Vertrieb: UP Umweltanalytische Produkte GmbH
Fon: 0355/48554-0 Fax: 0355/48554-15

www.upgmbh.com

info@upgmbh.com