

Peak Performance

from your vineyard

Southern Water
Engineering 



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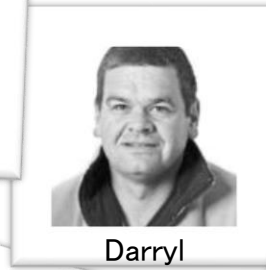
Mike



Stephen



Brad



Darryl



Rigger



Phil



Brent



Amanda



John



Geoff

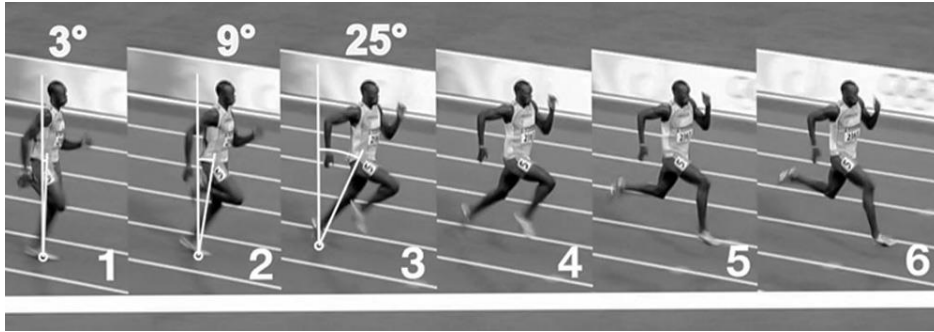


“The Lightning Bolt”

Peak performance:

- 11 times World Champion
- 6 times Olympic Champion
- Triple World Record Holder
- World's Fastest Man

Not by luck!



Peak Performance

How?

A-C-T

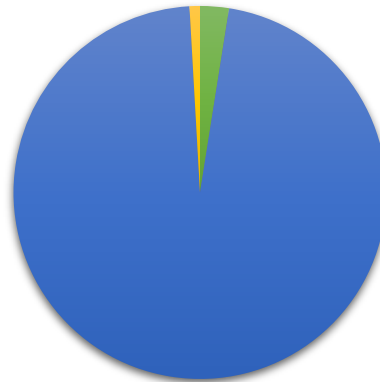
- Analysis
- Coaching
- Training



Why Does Peak Performance Matter?

Although there is plenty of water in the world >>

only 2.5% of it is freshwater!



■ Freshwater ■ Oceans ■ Other saline water

And most of this 2.5% is stored as glaciers or deep groundwater.
So only a small proportion is readily accessible for use

"Peak Water"

"By 2030, demand for water could be 40% greater than supply available" – UN Report, 2015.

- Groundwater mining
- Disappearing rivers
- Vanishing lakes
- Shrinking glaciers



Thirsty Work

Average person uses 1,386 tonnes of fresh water per year
= 1,000,000 tonnes of water each in a lifetime

Irrigation now grows 40% of world's food using 69% of its water

By 2050 65% of world food supply will require irrigation

Conclusion:

"we must double food output using half the currently available water"



It takes...
about 110 litres of water

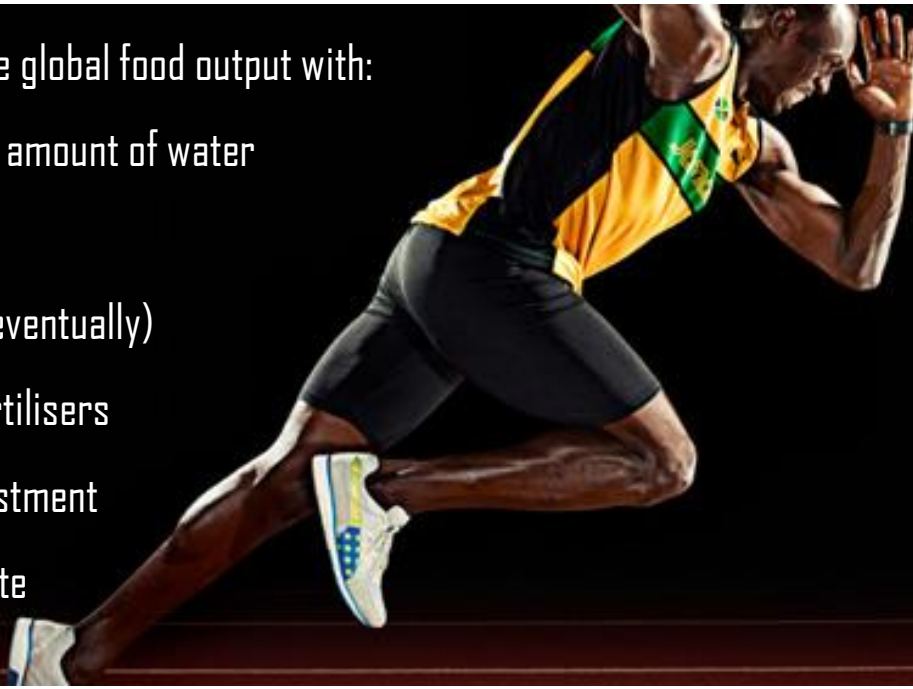


to make 1 glass of wine

The Challenge To Us All

To more than double global food output with:

- half the present amount of water
- less land
- no fossil fuels (eventually)
- unaffordable fertilisers
- inadequate investment
- unreliable climate



To perform better, with less



The Opportunity

- Save power
- Save water

Potential Power Savings

23,000 hectares of producing vineyards

10% power saving > represents saving \$17 per hectare per year

or \$400,000 power savings per year (as wine region)

+ additional saving associated with reducing line charge

= potential 2.4 million kilowatts less power wasted, per year

= enough electricity to power 220 homes for 1 year!

Potential Water Savings

Average of 5% potential water saving per year

= minimum saving of 102 m³ of water per hectare per year

= minimum saving of 2.3 million m³ of water per year (as wine region)

What Does That Look Like?

1,000 Olympic-sized swimming pools worth
of water every year.

Offers potential for irrigating further 900
hectares of extra land.



How Do We Achieve These Savings?

Remember Bolt's A-C-T peak performance

Irrigation system investigation and analysis = SmartAudit



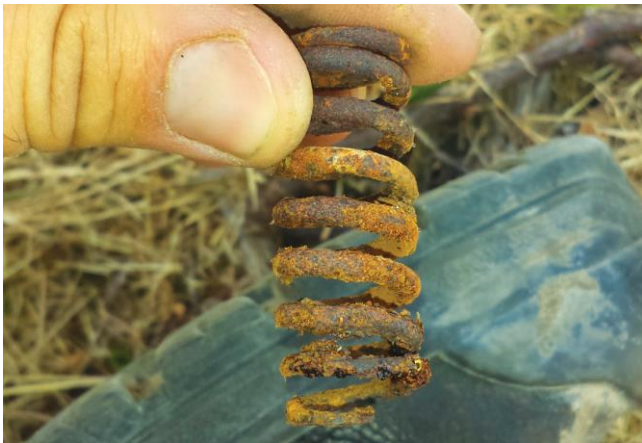
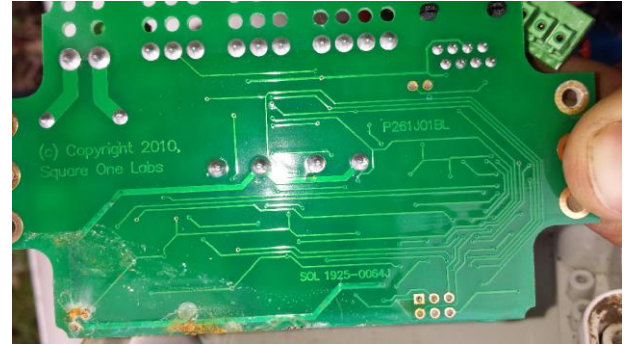
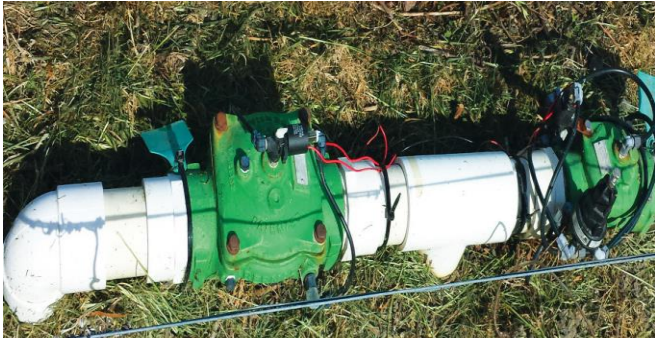
SmartAudit

Simple implementation

Significant savings



Real Life Examples



Case Study – Vineyard A

- Browning, canopy issues, problems with mainline.
- SmartAudit, service, replaced componentry, report recommendations.
- Areas functioning below par corresponded with canopy issues and lack of uniform application.
- Pre-audit only 70% of water well-utilised.
- Now 98% + greatly enhanced uniformity.



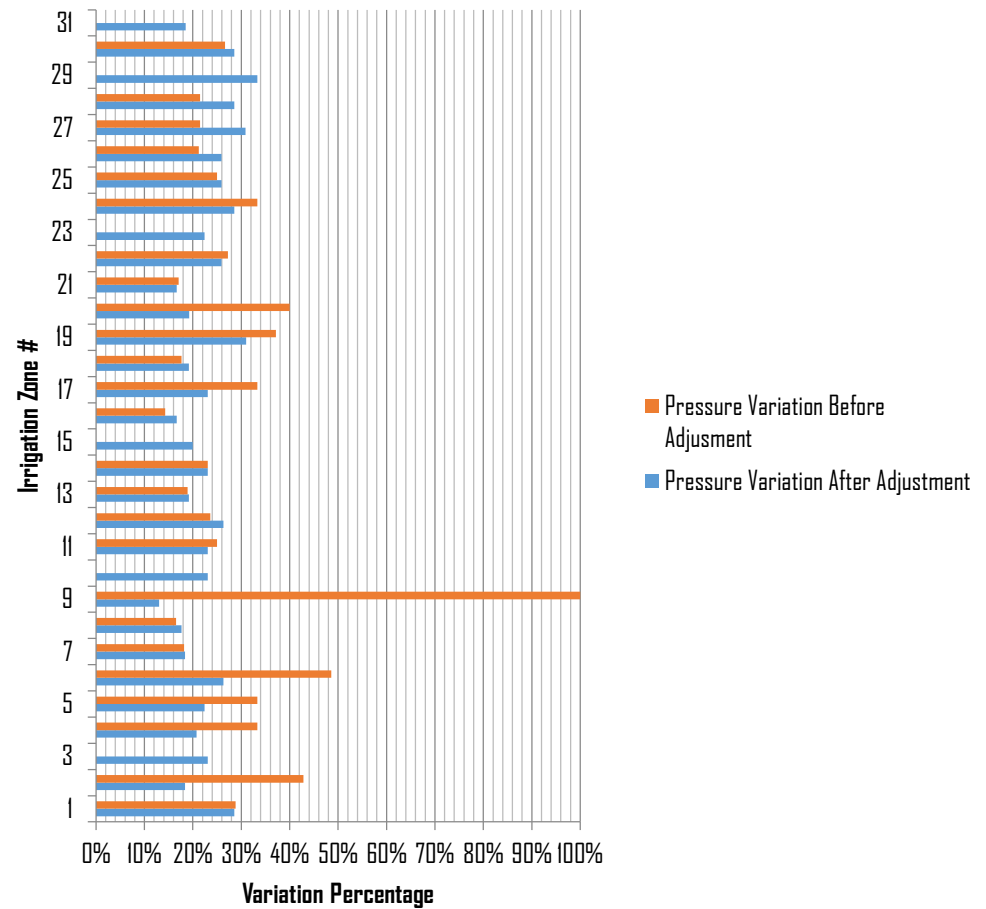
The Data

Sample pressure measurements

Corners			
SE	SW	NE	NW
55	25	60	15
180	50	200	70
50	25	110	45
55	70	85	65
80	45	60	50
50	45	55	0
270	200	235	210
95	80	115	75

Variation across corners and zones should be <20%!

Pressure Variation Before and After Adjustment

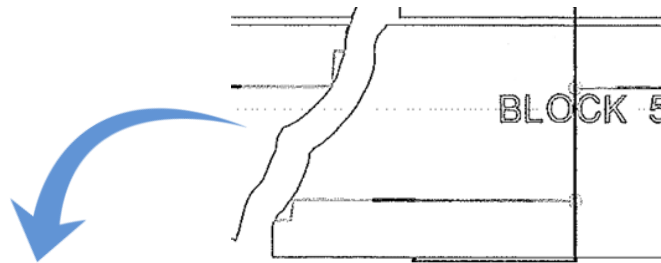


Case Study – Vineyard B

- Sub-main block and over-spec pumps
- Service, downsized pump and removed blockage
- Power bill is down from \$60k to \$40k per annum
= client saves \$20k per year!
- Client's focus on reducing water *wastage*.
- Now water application measurably more efficient



The Data



Rows (20 row gaps - heading West)										
Bays (5 bay gaps - heading North)	Valve	260	240	220	205	185	150	95	90	85
	260							95		
	200							95		
	170							90		
	150						Row end	85		
	145									
	135									
Row End	135									

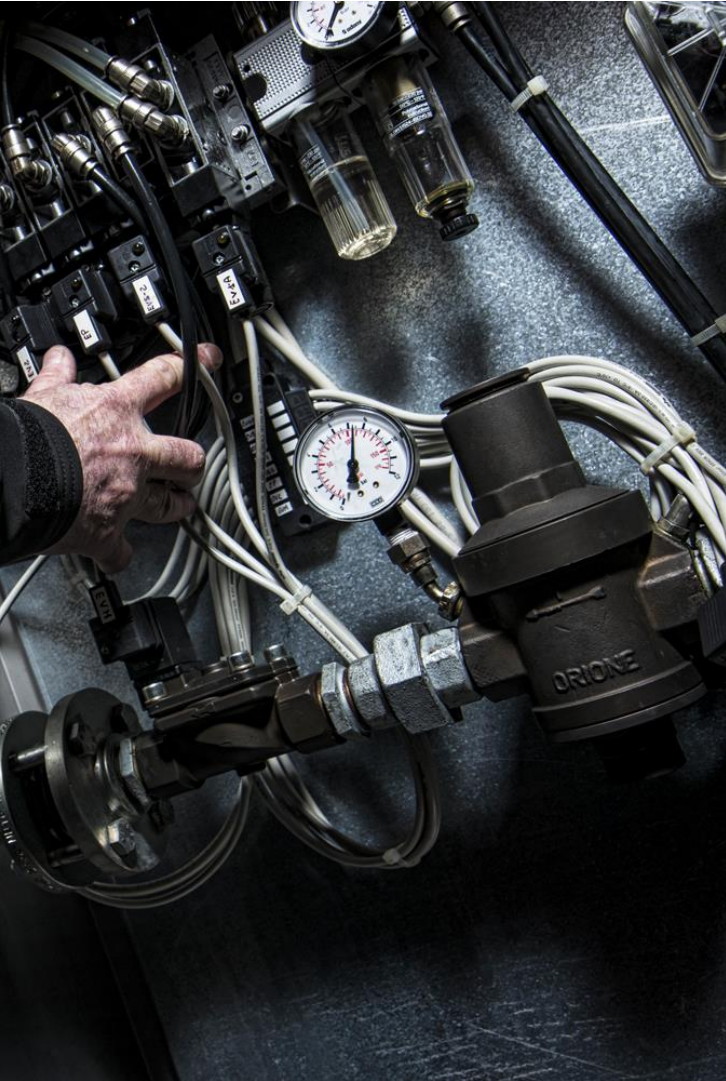
Poor design



Sub-optimal performance

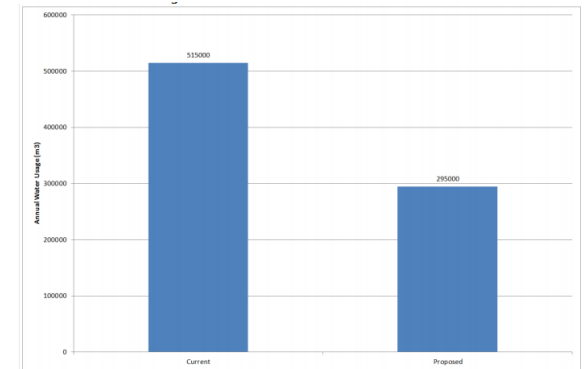


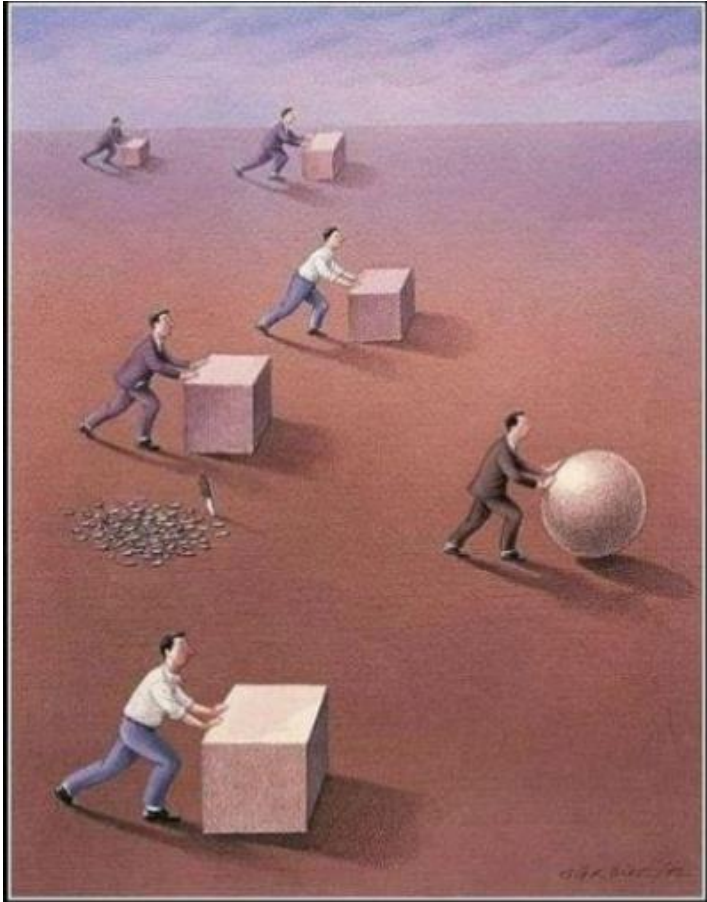
Impact on crop and \$



Further Application

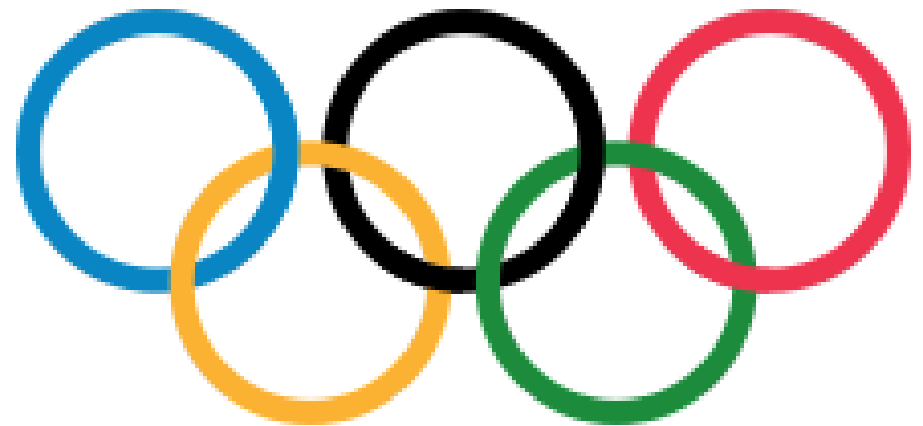
- Vineyards = tip of the iceberg
- Winery and food-processing facilities
- 43% reduction in water usage





Working smarter to go

Faster - Higher - Stronger



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Southern Water Engineering

The logo for Southern Water Engineering features a stylized wave or water droplet shape. It consists of a grey circular base on the left, from which three blue waves emerge and curve to the right. The waves are layered, with the top one being a lighter blue and the bottom one a darker blue.

expert design | excellent advice | exceptional service

A decorative graphic on the left side of the page consists of three overlapping, wavy bands. The top band is a light grey, the middle one is white, and the bottom one is a slightly darker grey. They all curve from the left towards the right, creating a sense of movement and flow.