

# WATER METERING SERVICES RAKAIA SELWYN GROUNDWATER ZONE AND CANTERBURY

**Prepared by: Rakaia-Selwyn RFP Water Meter Panel and Environment Canterbury**

Attached is a set of promotional flyers from the approved list of water meter suppliers, installers and service providers which were available at the time of mailing.

A full list of successful organisations including contact details and a service outline is available on Environment Canterbury's website:

<http://www.ecan.govt.nz/get-involved/consent-projects/rakaia-selwyn-reviews/Pages/water-metering.aspx>

## **Background - the 'request for proposal'**

Environment Canterbury was invited by Rakaia-Selwyn Cluster Groups to facilitate the water metering project. The project's brief was to investigate and identify the most appropriate and cost effective water metering systems. This process was by way of a 'request for proposal' (RFP) to seek proposals for preferred service providers for the supply and/or installation of a range of different water metering services to consent holders in the Rakaia-Selwyn groundwater zone. Environment Canterbury has extended the water metering project to the Canterbury region.

## **The base principles of the project were:**

1. Metering and associated technology has to fit for purpose
2. Cost effective
3. Future proofing.

With consideration to these principles the Rakaia-Selwyn Cluster Group's Water Metering RFP's objective is to:

1. Enable resource consent holders to access the most cost effective technology for improving efficiency of on-farm water application; and
2. Reduce on-going compliance costs.

Fifty-three respondents submitted proposals. The table below lists the successful organisations and the service or technology for which they were approved.

There are three approval categories –

- Preferred service provider,
- Authorised service provider, and
- Authorised - water meter supplier
  - datalogger/telemetry supplier
  - water meter installer
  - data service provider
  - compliance monitoring and reporting provider.

Organisations are ‘authorized’ to undertake one or more of these services. The difference between the ‘preferred’ and ‘authorised’ service provider is that the latter, at time of receipt of the proposal did not show the capability to be a ‘compliance monitoring and reporting provider’ although they were approved as a ‘data service provider’. These parties are currently developing the necessary processes to become in the future such a provider and may now have that capability.

<b>Preferred Water Meter Service Providers</b>
Hydrocom - alliance partners - Aquaflex (NZ) Ltd, Boraman Consultants Ltd & Watermetrics NZ Ltd
WaterForce with alliance partner Boraman Consultants Ltd
<b>Authorised Water Meter Service Providers</b>
KB Irrigation Ltd with alliance partners - Siemens (NZ) Ltd, and Adcon Telemetry PTY Ltd
Tyco Flow Control PTY Ltd (divisions of Water Dynamics & Aquaspec) with alliance partner Loncel Technologies Ltd

<b>Authorised</b>				
<b>Water Meter Supplier</b>	<b>Data Logger/ Telemetry Technology Supplier</b>	<b>Water Meter Installer</b>	<b>Data Service Provider</b>	<b>Compliance Monitoring &amp; Reporting Provider</b>
ABB Ltd	ABB Ltd			
Actaris PTY Ltd (NZ Agent Chatswood Trading Partnership)				
	Adcon Telemetry PTY Ltd  (A KB Irrigation Ltd & Siemens (NZ) Ltd alliance partner)			
AD Riley & Co Ltd  (A Canterbury Metering Services & Compliance Group alliance partner)	AD Riley & Co Ltd  (A Canterbury Metering Services & Compliance Group alliance partner)			
			AGTRAC 2020 Ltd	
		Allied Water Systems Ltd		
	Aqua flex (NZ) Ltd (A division of Streat Instrument Ltd & a Hydrocom alliance partner))			
Aquaspec  (A division of Tyco Flow Control a Loncel Technologies Ltd alliance partner)	Aquaspec  (A division of Tyco Flow Control a Loncel technologies Ltd alliance partner)			

		Ashburton Contracting Ltd		
Asmuss Plastic Systems Ltd				
	BayCity Technologies Ltd		BayCity Technologies Ltd (A CMSCG alliance partner)	
			Boraman Consultants Ltd (A Hydrocom & WaterForce alliance partner)	Boraman Consultants Ltd (A Hydrocom & WaterForce alliance partner)
DataCol NZ	DataCol NZ Ltd		DataCol NZ Ltd	
Deeco Services Ltd				
	Detection Services Ltd			
	EDAC Electronics Ltd			
			Environmental Consultancy Services Ltd	Environmental Consultancy Services Ltd
EMC Industrial Group Ltd				
	Farmworks Precision Farming Systems Ltd (AG-Hug)		Farmworks Precision Farming Systems Ltd (AG-Hug)	
		Grafton Irrigation Ltd		

	iQuest (NZ) Ltd		iQuest (NZ) Ltd	
		KB Irrigation Ltd (A Siemens (NZ) Ltd & Adcon Telemetry PTY Ltd alliance partner)		
	Loncel Technologies Ltd (A Tyco Flow Control alliance partner)		Loncel Technologies Ltd (A Tyco Flow Control alliance partner)	
	NIWA Ltd		NIWA Ltd	
	Outpost Central Ltd		Outpost Central Ltd	
		PGG Wrightsons Ltd		
		Plains Irrigators		
Prosol (NZ) Ltd	Prosol (NZ) Ltd			
Quasar Systems Ltd	Quasar Systems Ltd			
Rainer Irrigation Ltd	Rainer Irrigation Ltd	Rainer Irrigation Ltd		
		Ray Mayne Hose & Fittings		
	Scott Technical Instruments Ltd		Scott Technical Instruments	

		Sicon		
Siemens (NZ) Ltd	Siemens (NZ) Ltd		Siemens (NZ) Ltd	
Taylor Transmark FCX				
		Water Dynamics  ( A division of Tyco Flow Control a Loncel Technologies Ltd alliance partner)		
Waterforce	Waterforce	Waterforce	Waterforce  (A Adcon Telemetry PTY Ltd, AGTRAC 2020 Ltd, Boraman Consultants Ltd, iQuest (NZ) Ltd, Outpost Central Ltd alliance partner)	Waterforce  (A Boraman Consultants Ltd alliance partner)
Water Supply Products Ltd	Water Supply Products Ltd			
Watermetrics NZ Ltd  (A Hydrocom alliance partner)	Watermetrics NZ Ltd  (A Hydrocom alliance partner)	Watermetrics NZ Ltd  (A Hydrocom alliance partner)		
Yokogawa (NZ) Ltd				

The 'RFP' gave an insight into the cost of water meters, dataloggers and telemetry systems. Since the 'RFP' is only an approval process and not a tender it was agreed with the participants that the 'RFP' panel

would not release individual pricing but would provide a summary guide of the individual technology (summarised in the following tables).

<b>Water Meters</b>												
Meter Size (mm)	25	40	50	65	80	100	125	150	200	250	300	
<b>Electromagnetic Flow Meters</b>												
Median Price (\$)	1969	2144	2806	2343	2787	2991	3360	3458	3991	4594	5861	
Unit Numbers Considered	6	5	25	8	27	31	12	29	31	29	18	
<b>Mechanical Flow Meters</b>												
Median Price (\$)	130	594	604	736	827	1053	1348	1693	1880	2774	4999	
Unit Numbers Considered	4	4	9	4	10	4	4	10	9	8	8	
<b>Ultrasonic Clamp-on Flow Meter</b>												
Median Price (\$)	4985		4943									
Unit Numbers	5		6									

Considered												
<b>Meter Size (mm)</b>	<b>25</b>	<b>40</b>	<b>50</b>	<b>65</b>	<b>80</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	
<b>Electromagnetic Insertion Flow Meter</b>												
Median Price (\$)			2875	2550				2770				
Unit Numbers Considered			2	3				3				

<b>Data Loggers &amp; Telemetry Technology</b>		
	<b>Dataloggers</b>	<b>Telemetry</b>
Median Price (\$)	750	1290
Unit Numbers Considered	14	16

- Table Notes:
1. Prices given are GST excl.
  2. All electromagnetic flow meter prices have been assessed (where possible) to include recommended accessories.
  3. All meter prices have been assessed (where possible) include a display unit.
  4. Telemetry system technology includes cellphone and radio technology. The table does not differentiate between the two technologies.
  5. Prices given are indicative and do not include supplier/installer mark-up.

## Meter Choice

There are a number of parameters to consider when deciding on what type of flow meter to choose for a particular job.

### Price

When choosing a meter, purchase cost, meter life, installation and maintenance costs should be taken into consideration, especially when installing meters into existing infrastructure. Cost factors that need to be considered in order to meet the meter specifications, include adjustments to the pump setup, pipe work and fittings.

Usually for smaller diameter pipes, mechanical meters are cost effective, while for larger diameter pipes and very high flow rates, ultrasonic and magflows meters may be cost competitive with mechanical meters.

### Water Source

This could be a river, surface water, groundwater, open channel or pressurized pipe. Water source will have a bearing on water quality (silt, sand, weed etc) range of flow rates and head.

### Head

How much head do you have? Do water levels fluctuate during the season? If so by how much? What is the minimum head a meter needs to work? Do you need to minimize head loss?

### Flow Range

What is the flow range throughout the year and what are the fluctuations in flow? Most meters have a minimum flow below which they cannot provide accurate reading. If you choose a large meter, you may lose accuracy at the lower end of the flow range. Meters continually operate in the high flow range wear out and fail much quicker than meters that operate in the middle of their range.

### Access to Power

When selecting meters for remote locations you will need to consider if they can run accurately on solar power, batteries or even need power at all. This also applies to data loggers.

## Accuracy

If there is a requirement for data accuracy of 2% then it would not be useful to choose a meter that only reads with an accuracy of 5%. A manufacturer's claims for meter accuracy are usually well substantiated by laboratory tests supplemented by standardized field tests. A meter will only be accurate if the metering situation meets all the manufacturer's and Environment Canterbury requirements of flow profile, temperature, humidity, flow range, vibration etc.

## Reliability

A meter needs to be reliably accurate so it provides the correct reading time after time.

## Data Output

What level of accuracy do you need (check conditions on your resource consent)? What units do you need your data in? Does the data need to be a measure of instantaneous flow, totalized flow or both? Does the data need smoothing or integration?

## Tamper Proof

A meter needs to be sealed and tamper proof from the possibility of dismantling, altering or removing of components.

## Longevity

What is the average operating life before overhaul? This will depend on the meter type and the situation the meter is used in.

## For further information contact:

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