Version No: Issue Date: Portfolio:	1 07/02/2023 Discrete Water Quality	Horizons Regional Council	Section No: 14.4 Appendix: 2 Page: 1 of 4		
		Hydrology Operations Manual			
VuSitu Mobile App Configuration					

# VuSitu Mobile App Configuration

## OVERVIEW

Horizons Regional Council's (Horizons) Sampling Teams use both the In-Situ Smartroll MP (SM) and In-situ Aquatroll 400 (AQ) handheld meters for recording field measured parameters when collecting Water Quality (WQ) samples where possible (the exception being sewage treatment ponds and effluent discharges). Horizons also use these meters for lake profiling and to provide check data for continuous water quality sites.

The AQ replaces the now discontinued SM, both instruments share the same probes, and both utilise the same VuSitu App to display the instruments readings.

Horizons staff on the following devices use the App:

- (i) IPads purchased as part of the AQ CAPEX purchase: these are found on charge in the WQ lab, Environmental Data (ED) and Science offices.
- (ii) IPads bought for Science programmes (i.e. periphyton monitoring): these are found in the Science office.
- (iii) Work iPhones: these are distributed to staff.

All devices used or likely to be used for WQ sampling must have the App correctly configured prior to use.

#### ASSET MANAGEMENT

Devices are recorded in the ED Asset database:

th and Safety	Assets	Assets in the Laptops category			Out of Service & Serviceable Past Calibration			
				Paet Expected Life Write	ten Off			
quipment and tools				has expected the	Rock Value			
nstruments				NOT	Jook value			
Dataloggers								
Gauging Assets								
Handheld Meters	Make	Model	Serial No.	Location	Installation Date	Next Calibration	Purchase Date	
Level & Flow	Apple	iPad 6th Gen 128GB	DMPX226ZJF89	HRC Regional House (In Service)	21-Nov-2018	21-Feb-2102	21-Nov-2018	
Met	Apple	iPad 6th Gen 128GB	DMPX22FRJF89	Staff: Jacob Channon	28-Nov-2018	21-Feb-2102	21-Nov-2018	
🖥 Rain Gauges	Apple	iPad 6th Gen 128GB	F6QZC01GJF89	HRC Regional House (In Service)	15-Oct-2019	15-Jan-2103	15-Oct-2019	
Sampling	Apple	iPad 9th Gen 256GB	GN6TXQWJMX	Staff: Darren Bentley-Hewitt	6-Dec-2022	8-Jan-2105	8-Oct-2021	
Webcamera	Apple	iPad 9th Gen 256GB	M7K3WLP925	HRC Regional House (In Service)	1-Dec-2022	8-Jan-2105	8-Oct-2021	
wo	Apple	iPad 9th Gen 256GB	VXW67XPHXK	HRC Regional House (In Service)	1-Dec-2022	8-Jan-2105	8-Oct-2021	
Conductivity	Apple	iPad Mini	F85LJZD4FPFL	Steve Packer	23-Aug-2014	23-Nov-2097	23-Aug-2014	
Controllers and Interfaces	Apple	iPad Mini 2	F9FR705JFLML	HRC Regional House (In Service)	17-Jun-2016	17-Sep-2099	17-Jun-2016	
Dissolved Oxygen	Apple	iPad Mini 4	F9FTP581GHMN	Science Department	6-Dec-2022	15-Sep-2100	15-Jun-2017	
Misc Water Quality Sensors	Apple	iPad Mini 4	F9FTP5EWGHMN	Science Department	6-Dec-2022	15-Sep-2100	15-Jun-2017	
Non critical W/O Sensors	Apple	iPad Mini 5	DMPCR32SLMT7	Staff: David Brown	1-Jan-2014	1-Apr-2097	1-Jan-2014	
all Season	Apple	iPad Mini 5	DMPZ71TKLMT7	HRC Regional House (In Service)	18-Sep-2019	18-Dec-2102	18-Sep-2019	
Codiment	Apple	iPad Mini 6th Gen 256GB	H20D0W5LX9	HRC Regional House (In Service)	1-Dec-2022	28-Dec-2105	28-Sep-2022	
Sediment	Apple	iPad Mini 6th Gen 256GB	PCVJ2N73MT	Staff: David Brown	1-Dec-2022	28-Dec-2105	28-Sep-2022	
Sondes	Apple	iPad Mini 6th Gen 256GB	QRL743KG4V	Staff: Darren Bentley-Hewitt	1-Dec-2022	28-Dec-2105	28-Sep-2022	
• Urbidity	Apple	iPad Mini ME820X/A	F\$KMT0PCFLML	HRC Regional House (In Service)	1-Jan-2014	1-Apr-2097	1-Jan-2014	
Water Temperature	Apple	iPad Mini ME820X/A	F9FPH0ZNFLML	HRC Regional House (In Service)	11-May-2015	11-Aug-2098	11-May-2015	
ptops	Apple	iPad Mini ME820X/A	F9FPJ087FLML	HRC Regional House (In Service)	11-May-2015	11-Aug-2098	11-May-2015	
aintenance	Apple	iPad Mini ME820X/A	F9FPJ0HRFLML	HRC Regional House (In Service)	11-May-2015	11-Aug-2098	11-May-2015	
ower	Apple	iPad Pro 11" 2d Gen wi-fi + cell 1TB	SDMPD 40 1NNTH 4	Survey Department	24-Oct-2020	24-Jan-2104	24-Oct-2020	

Figure 1: Asset Screenshot showing location of all iDevices used for WQ sampling

Any iPad that is used or likely to be used for WQ sampling is to be added to Asset by the Discrete WQ portfolio holder or proxy.

#### **VU-SITU CONFIGURATION**

When a device first connects to VuSitu all options are selected, for standard practices the following parameters and units are required:

- Water Temperature (°C). Note: this is simply labelled temperature without a logo.
- Barometric Pressure (mbar)
- RDO Saturation (% Sat)
- RDO Concentration (mg/L)

### © Horizons Regional Council 2023

Version No: Issue Date: Portfolio:	1 07/02/2023 Discrete Water Quality	Horizons Regional	Section No: Appendix:	14.4 2
		Council	Page:	2 of 4
		Hydrology Operations		
		Manual		
	Vi	Situ Mobile App Configuration		

- Specific Conductivity (µS/cm) Note: Actual Conductivity is not wanted!
- pH (pH units)
- pH mV (mV). Note this is used for calibrations.
- ORP (mV). Note: Oxidation Reduction Potential (ORP) is typically used for Groundwater Monitoring.

The iDevice being used should be configured as per figure 2 prior to any calibration and/or data collection; the Discrete WQ portfolio holder or proxy can set this up for you. All iPads in circulation should already be configured correctly.

11:0	6 🕇		"II 🔶 [	83
۲	Live Readings			
	Aqua TROLL 400	) - SN 661256		
	Device Locatio	'n	GI	PS: 🤡
	Your device's GF	PS location will b	e recorde	·
	_	Chan	ge Locatio	n >
₩ (	Refresh Rate: 2	2 sec 🏟		
<b>~</b>	Temperature	17.53 °C		
<b>~</b>	💊 Barometric Pressure	1,004.2 mbar	0	
<b>~</b>	RDO Saturation	100.08 %Sat	•	
<b>~</b>	RDO Concentration	9.48 mg/L	•	
~	Specific Conductivity	7.72 µS/cm	•	
<b>~</b>	рН	6.81 pH	•	
<b>~</b>	pH mV	-2.9 mV	•	
~	ORP	1.0 mV	•	
	💊 Temperature			
	Oxygen Partial Pressure			
	Actual Conductivity			
	Salinity			
RECOR		Start Recor	ding	
		,		

Figure 2: Screenshot showing correct configuration of iDevices prior to undertaking WQ sampling

© Horizons Regional Council 2023

Version No: Issue Date: Portfolio:	1 07/02/2023 Discrete Water Quality	Horizons Regional Council	Section No: Appendix: Page:	14.4 2 3 of 4		
		Hydrology Operations				
		Manual				
VuSitu Mobile App Configuration						

## **CHECKING INSTRUMENT TIME**

It is important to regularly check the instrument times vs the iDevice time, as drift is possible. Remember the Instrument should be the NZST. IPads should already be set to NZST as standard whereas iPhones will be to NZDT. The process is detailed below:

11:36 C ···· ··· · ··· · ··· · ··· · ···· · ····	11:36 <b>L</b> .ul 중 80	11:37 🗲		ııl 🗢 79	
Connected Instrument	( 🕮 Instrument Settings	< 🛞 Instru	ment Clock	1. E.	
	Agua TROLL 400 - SN 661256		Aqua TROLL 400 - S	N 661256	
Battery: 99% remaining	instrument Clock	accurate log	gging.	ire	
battery. 55 % remaining	Salinity Setting	Current mobi	ile device time:		
Instrument Time: 10:37 a.m.	Specific Gravity Setting		11:36 a.r	n.	
7/02/2023	Derived Parameters		7/02/202	23	
	Level Mode	Apply mobile device time 5			
	Communication Settings	Instrument Time:			
	SDI-12 Settings	3	10:36 a.m.	<b>04</b>	
	Real-Time Alarms		7/02/2023	-0-	
	Instrument Firmware				
	Restore Factory Settings				
	Restore Calibration Defaults				
<ul> <li>Live Readings</li> <li>Calibrations</li> <li>Instrument Settings</li> </ul>					
Ø Disconnect		Car	icel	Save 🔥	
1. On the home screen select Instrument Settings	2. Select Instrument Clock	<ol> <li>Check that the instrument time is correct to NZDT.</li> <li>To manually change the instrument time select the consymbol adjust the time and h save.</li> <li>When NZST = NZDT you car select 'Apply mobile device time'.</li> <li>Also, check that the date is correct.</li> </ol>		e instrument time IZDT. change the ne select the cog t the time and hit = NZDT you can mobile device nat the date is	

Figure 3: Sequence for checking instrument time vs. iDevice time



Figure 4: Screenshot showing the difference between Air and Water Temperature (taken in the ED office)

The symbol represents the baro/battery unit of the SM/AQ and only appears for Air Temperature and Barometric Pressure.

#### SPECIFIC CONDUCTIVITY VS. ACTUAL CONDUCTIVITY

For all WQ sampling Horizons collects Conductivity corrected to 25°C – Specific Conductivity. Ensure that this option is selected. Note: Actual Conductivity is not corrected to a set temperature; in the field, the difference between the two is not immediately apparent.



Figure 5: Screenshot showing the difference between Specific and Actual Conductivity (taken in the ED office)