

## Case Study – Pete & Jess Mitchell, Angaston Ellenex Tank Level Monitor

Peter and Jess Mitchell use an Ellenex Tank Level Monitoring system on their 700-hectare sheep and beef enterprise close to Angaston, in the Mount Lofty Ranges, South Australia. The Ellenex system is the Ellenex PLS2-N5M. They purchased this system before the “On-Farm Water Innovations Project” began and have joined the project to kindly contribute data and their feedback.

Peter and Jess own and operate a sheep and beef enterprise of approximately 700ha over three hills grazing properties. Peter is a 4<sup>th</sup> Generation farmer on their home property. They are currently running a self-replacing merino flock of approximately 1300 breeding ewes, and a herd of beef cattle.

The property was originally set up with dams in all paddocks, but following recent drought, they have come to rely on underground water. They use solar pumps to pump stock water to a header tank, which is reticulated to 95% of the property through pipes to troughs. Peter says that tank level monitoring is important because in the event of a leak, it would take over a week to catch up the lost water whilst livestock still rely on it as a water source. Pete’s three needs when choosing a monitoring system were; cheap, easy to use and accessible. One system was cheaper, but was not app. based, which meant that he would have to rely on checking a screen or wait for an alarm. The Ellenex system is app. based and will send SMS messages and emails if any set parameters fail, eg, tank level below 25%. You can set up workers with the app also and add them to the SMS/email listings.

Before the installation of the device, an issue was a slow solar pump, which struggled pumping over long distances. They had a leak in winter that wasn’t detected, and tried to pump water with nothing in the tank. To ‘catch up’ the lost water, whilst there was immediate demand from the livestock, took over a week.

Before installing their Ellenex device, they would travel 1.6 kms every second day during summer, when the entire property was linked to this tank. During winter/spring, the trips would be weekly to make sure that the tank was full. The system stemming from the tank is linked with 16 outlets. 4 troughs are permanent, and the rest are all portable. During the 19/20/21 summer drought their entire 400 ha property was feeding from the tank with the tank level monitoring device. There were 1100 pregnant ewes and 500 hogget ewes. The system has an alarm level trigger which sends emails and text messages if Pete and Jess are away from their property. If there has been an alert, Pete has been able to guide their neighbour with repairs over the phone. Pete and Jess will be looking into purchasing another tank level monitor in the near future.



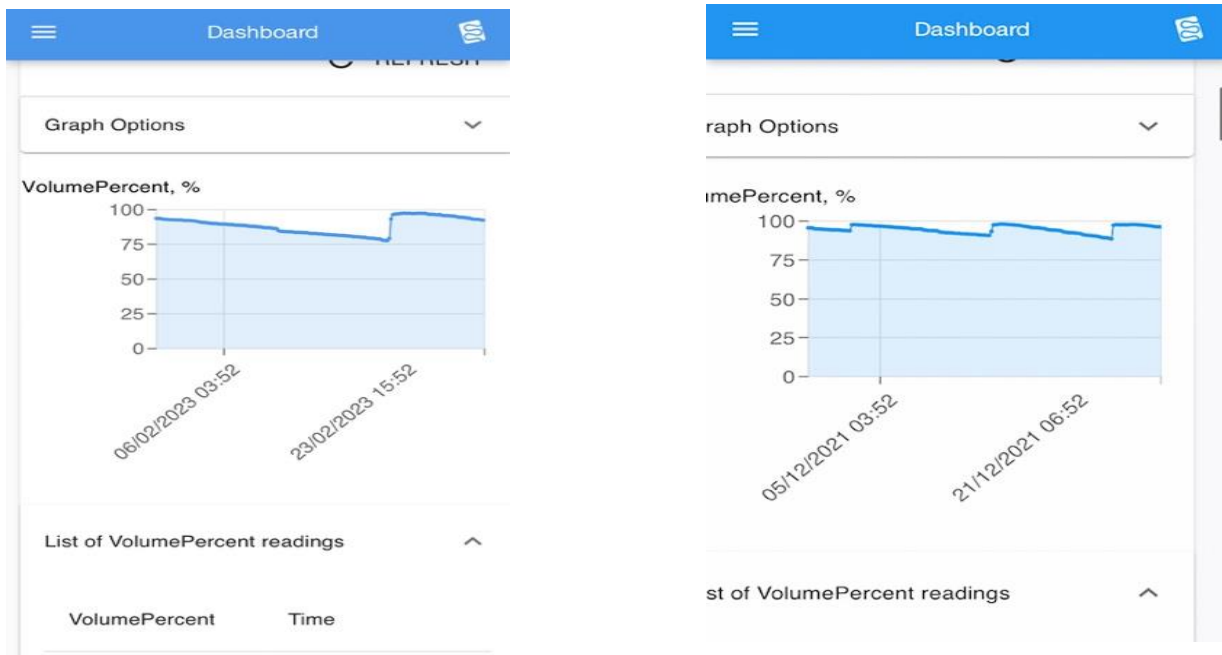
Figure 1: Ellenex PLS2-N5M.

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**Dashboard:**

The PLS2-N5M model will send SMS messages and emails if any set parameters fail, such as tank water levels showing high or low thresholds, with multi-channel alerting. PLS2-N is the Model 5, which reflects the maximum depth of tank for accurate measurement. This is an app. based model and will send SMS messages and emails if any set parameters fail, such as tank water level dropping below a certain percentage. PLS2-N is the Model 5, which reflects the maximum depth of tank for accurate measurement. Multiple users can be set up to receive SMS or email notifications. Readings are readily available at 1 x every 4 hours, but this can be altered to more frequently, but it will potentially affect the longevity of its battery life.

The device can also be used as a leak detector, as it updates frequently. The alarm is set to below 50% capacity, so the user can detect which connection is below capacity.



**The Mitchell’s Estimated Ellenex Savings Calculator over 3 years:**

**Current Operating Costs: Over 3 years.**

Total time (hours)	104
Total kilometres Driven	998
Labour Cost (@ \$50/hr)	\$5,200
Fuel Cost (@1.72/litre diesel)	\$515.00
<b>Current Cost to Check Water Tank</b>	<b>\$6,817.00</b>

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### Ellenex Operating Costs: over 3 Years:

Ellenex Hardware/software	\$653.00
Operational Costs with Ellenex	\$264.00
Ellenex Costs to Check Water	\$917.00

### Ellenex Costs Savings: Over 3 Years.

Total Costs Savings	\$5,900
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### Connectivity requirements:

The Ellenex system is the Ellenex PLS2-N5M. PLS2-N is the Model 5. It is compatible with most standard communication protocols (UDP, LwM2m, MQTT, NIDD, etc.) and should work with any network provider. This system has a high accuracy and is designed to meet outdoor conditions with a long-term durable performance standard in harsh environments.

This is an app-based model, and measures range is 3m depth of water. It will send SMS messages and emails if any set parameters fail, such as tank water levels showing high or low thresholds, with multi-channel alerting. Multiple users can be set up to receive SMS or email notifications. Readings are 1 x every 4 hours, but this can be altered but it will potentially affect the battery life.

### Installation and Power:

No skillset required for installation. It uses very little power through its built-in replaceable lithium battery. The lifetime of the battery is 50,000 readings and 10,000 transmissions, which is estimated to run for more than 10 years for most of the applications.

### Pricing Model:

The purchase cost was \$653.00, plus \$88.00 annual subscription and monitoring fees.

### How can I contact the suppliers:

- Ellenex.com CALL: +61 3 9010 6083

### Contact

- Contact Jane Evans: The Barossa Improved Grazing Group, Project Officer.
- Email: [jane.evans@biggroup.org.au](mailto:jane.evans@biggroup.org.au) / Phone : 0412500752.

