

DAVAO CITY MOVES TO FIXED NETWORK LEAKAGE MONITORING



Installation of 320 Ovarro remote correlating loggers has taken place in Davao City in the Philippines, with a major leak detected just days later. The volume of water saved means a large-scale project to construct a new production well can be put on hold.

THE CHALLENGE

Davao is the largest city on the island of Mindanao and the third largest in the Philippines. With a rapidly increasing population, the city is considered one of the country's fastest economic growth areas. The population's water supply is managed by Davao City Water District (DCWD), which has been challenged to reduce non-revenue water (NRW) losses by 1% per annum until it reaches a target of 20% NRW. Groundwater has historically been the city's main source of water, but increasing pressures deriving from population growth and urbanisation means there is a need to limit abstraction and make supplies more sustainable.

For utilities like DCWD, reducing demand for water by cutting NRW is a key part of long-term supply planning. The district has invested in advanced correlating noise loggers from Ovarro's Enigma range – 260 of the Enigma3m model and 60 of the Enigma3HyQ model – as part of its drive to secure future water supplies.

SIGNIFICANT SAVINGS

Enigma3m correlating loggers, supported by Ovarro's local partner, Eastasia Solutions Technologies Corporation, identified a previously undetected leak. The leak, estimated to be over 1,000m³ per day, had gone unnoticed for potentially 10 years, resulting in significant water loss for DCWD. Repairing the leak led to a 15PSI rise in water pressure in the surrounding area, with considerable cost savings for DCWD. This allowed DCWD to delay plans for a new production well, reducing financial and environmental impacts. Enigma correlating noise loggers gather sound samples for analysis by for analysis by the cloud-based analytics tool LoggerVision, which allows users to visualise and review the data collected. The Enigma3m and Enigma3HyQ are designed for remote deployment and use an integrated battery and 4G modem to provide daily samples of pipeline noise for up to five years.



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WATER



MONITORING
& CONTROL



LEAK NOISE LOGGERS
& CORRELATORS



CORRELATING LEAK NOISE LOGGERS

With 50 Enigmas in a district metered area (DMA), up to 1,225 correlations can be performed every day, analysing pipeline noise for evidence of leaks.

A leak will generate vibrations in the pipe material that is collected by an Enigma3m via an accelerometer. In the case of softer plastic materials, noise attenuates quickly, so an Enigma3HyQ, with its integrated hydrophone is preferred. Daily analysis excludes any ambient interference and pinpoints significant noise sources between loggers to provide the precise location of leaks in water distribution networks.



“DCWD’s installation of fixed correlating loggers is a first for the Philippines and we are very excited to be working with Eastasia Solutions and Davao City Water District on such an important project.”

Craig Abbott, Ovarro channel sales manager - Asia



CHANGE IN APPROACH

The engineer in charge of DCWD’s active leakage control team told Ovarro he had seen a change in approach towards leak detection in his crew. He explained that his team had previously walked the streets of Davao City with ground microphones. He said, “Now, with a precise point of interest and evidence from the Enigma3m loggers, the team go to the location and do not return until they have an explanation for the noise – usually uncovering a new leak. It is changing the way they look at leak detection, with positive results.” Ovarro channel sales manager Craig Abbott said, “the significance of their change in attitude cannot be understated. DCWD’s team are transforming into a professional leak detection outfit that will benefit DCWD, its community and the local environment. They are setting a fine example for all Philippine water authorities to follow.”

KEY DELIVERABLES

- Reduced NRW losses with Enigma correlating noise loggers.
- Enigma3m and Enigma3HyQ models for precise leak detection.
- Significant cost savings and environmental impact reduction.
- Professionalization of leak detection operations achieved.

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