

WATER NETWORK MANAGEMENT
Real-time monitoring and proactive decision making
SOLUTION BRIEF



Leakage Management

Water Distribution Systems

Typically reduces Non Revenue Water with more than 10%

Savings and other benefits

Reduction in water loss > 10%

Reduction in energy consumption ~ 5%

Return On Investment 1-2 years

Reduction in chemical usage

Improved water quality

Reduction in new ruptures

Powered by AQUIS

Correct calculation of:

- Water quality and age

- Water direction

- Pressure and flows

To ensure that you will quickly detect new leaks in your network, 7-Technologies provides you with the robust and reliable detection methods Integrated Flow Measurement (IFM) and Nightline Measurement (NLM).

AQUIS Leakage Management has been developed on the basis of more than 20 years of experience with leak detection and location on water network systems.

Leakage levels in each zone are identified by the leak detection system, an alarm is forwarded to the SCADA system, and action can be taken immediately.

The Integrated Flow Measurement Method (IFM)

The AQUIS IFM method is applied to leakage control zones. For each zone the consumption is continuously integrated over the latest 24-hour period and compared with the figures representing the same period from the previous weeks, which are calculated as average values over a number of weeks defined by the user. In case a leak is detected, an alarm will be submitted to the SCADA system.

The Nightline Measurement Method (NLM)

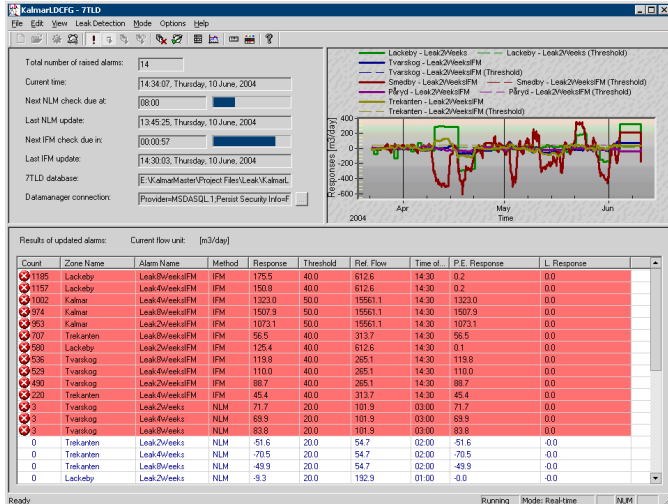
AQUIS NLM is applied during periods with minimum consumption - typically at night time - to monitor changes in background leakage level.

AQUIS NLM works in a similar manner to the AQUIS IFM method (Integrated Flow Measurement), except that the NLM considers measurements in a fixed time window during periods of minimum consumption, where leakages will make up the highest proportion of the total flow.

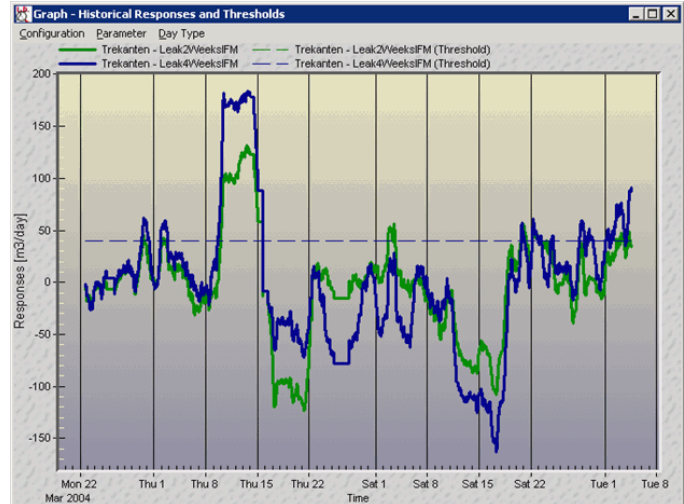
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The AQUIS NLM & IFM main screen displays responses, main data and selected user defined plots.



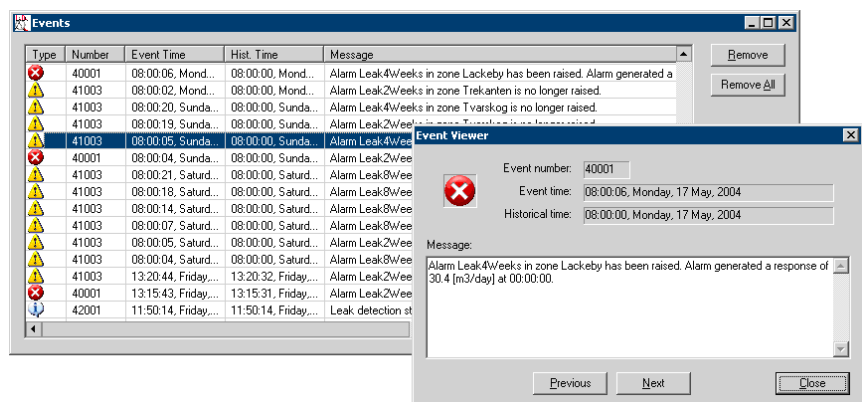
The AQUIS IFM response plot displaying a flow response for two different averaging periods and the actual threshold value.

“Leakage Management allows us to very quickly identify where a leak is. This saves time, and a lot of money. Our leakage-% has dropped from 10 % to 6-7 %.”

Henning Saabøll,
Managing Director,
Birkerød Waterworks, Denmark.

The methodology employed is to find the minimum night flow within a fixed time window every night. This value is compared to the minimum flow found for the same weekday in average buffers calculated for the number of weeks defined by the user.

The below figure shows the buffer of the latest events issued by AQUIS NLM. Double-clicking a message line will zoom on the selected message and present the complete text.



An event is either a system message or a message generated via the event management system (user defined).