

Step Test with GPRS in Ferrieres en Gatinais

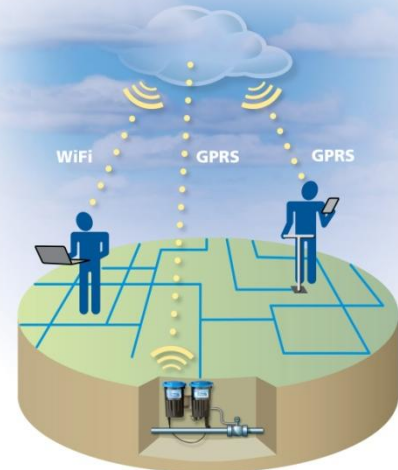
Case Study CS3-XS-044-1.0

Introduction

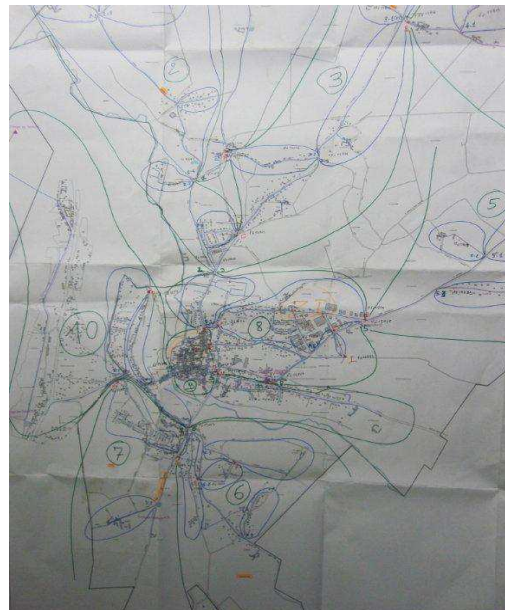
Ferrières en Gâtinais is a small town in the central region of France where the network is managed by Lyonnaise des Eaux. The daily water production had risen from 450m³/day to 700m³/day. Investigations were carried out in the leakage sectors by the operation of valves and quantifying the volume of loss by sector. As part of this process **Xstream** was deployed on 26th February 2013. **Xstream** allows the operator to remotely follow instant flow and pressure data from a network in real time.

Implementation

- Installation of by-pass on water tower output valve
- Fitting of meter with pulse head with an output of 1 pulse/litre to obtain high resolution flow-rate measurement
- Connect **Xstream** to flowmeter and pressure fitting
- Define the sector valves to be closed



By-pass with meter and Xstream installed

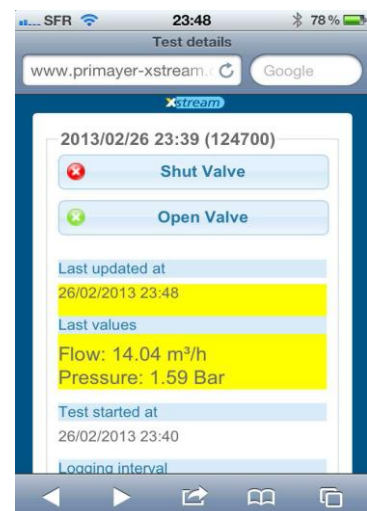


Network divided into ten sectors each with 5-6km of

Data Display

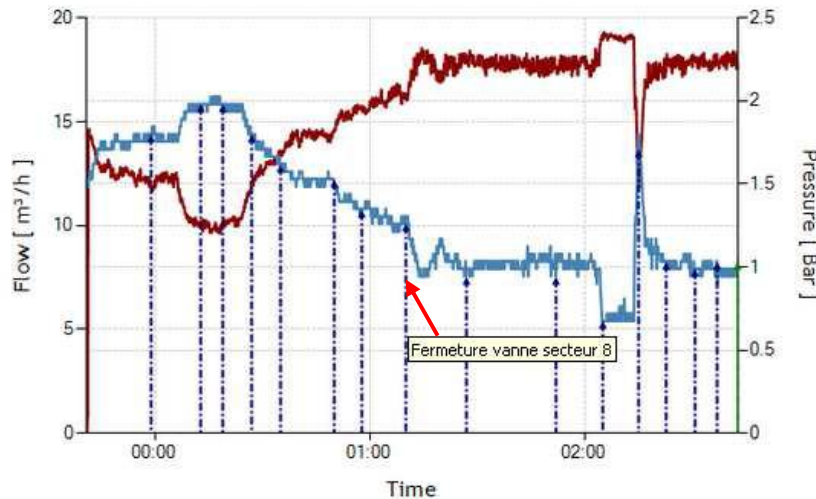
Data is displayed on a computer, tablet or Smartphone equipped with a GPRS connection. Secure access is provided to the **Xstream** data on a Primayer website with the result that real-time data is available to be viewed on-site as soon as a sector valve closure occurs.

Xstream real-time data displayed graphically and numerically on Smartphone



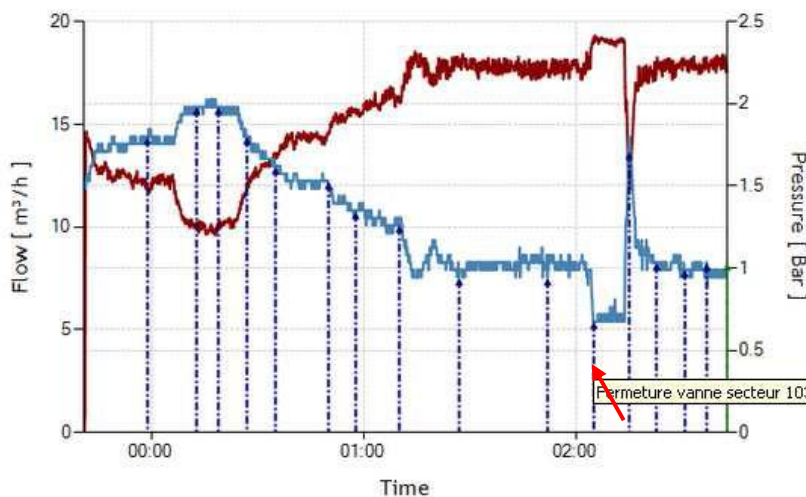
Results

The investigation commenced at 23:41pm with a nominal flow-rate of 14.4 m³/hr. Closure of valves 1, 2, 3, 9 and 10.4 made no difference to the flow. Closure of valves in sector 4 and 5 show a fall of 300 l/h and closure of valve 6 show a fall of 350 l/h. Two valve closures (below) have a more significant affect.



Closure of valve 8 shows a fall of approximately 650 l/hr

Blue line = flow (m³/hr).
Red line = pressure (Bar).
At each closing of valve a comment was created by using the function 'create comment'



**Closure of valve 10.3
A significant fall of flow and increase in pressure gives evidence of a leak of 2.5 m³/h in this area**

The leak is confirmed at the opening of this valve by a dramatic increase of the flow-rate and a sudden drop in pressure

Summary

High night-time water consumption was measured in these two sectors (other sectors show less significant flow reduction);

- Sector 10.3: Flow reduction 2.5 m³/h
- Sector 8: Flow reduction 0.650 m³/h

This resulted in the leakage being identified at the beginning of a sector with 2.5km of pipe. The operation defined this whilst avoiding the necessity for leak detection on the whole network. The benefits of using **Xstream** were;

- The simplicity of set-up and operation of the technology
- Remote display of real-time, accurate, data
- Reactivity of the information immediately upon closure of valves
- Simultaneous pressure tracking; key to network management during the valve operation.

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