

Customer

Affinity Water

Location

Bedmond, Hertfordshire

Product

- MULTISCAN Multipoint Correlator
- AQUASCN 620 Laptop Correlator
- AQUASCOPE 3 Ground Microphone

MULTISCAN, AQUASCAN & AQUASCOPE join forces to pinpoint a quiet leak on a plastic supply pipe

In late February 2020, Leakage Engineers at Affinity Water were tasked with locating the source of a visible leak in the High Street of a small village in Hertfordshire. On the face of it, it seemed like a straightforward problem to fix, but excavations at the site revealed only that the water was escaping from a redundant gas main and that the leak location could be much further away.

A thorough sounding of the area was conducted by one of the Lead Engineers with over 20 years' experience. Although the area surveyed was predominantly cast iron (renowned for its good acoustic properties) this yielded no areas of interest.

MULTISCANs (or the 'super loggers' as this team affectionately call them) were deployed in the area for an overnight read to get a better understanding of what might be happening when the pressures were higher and the background noise lessened. The results were very positive, as Figure 1 below shows.

"...the 'super loggers...'"

David Piesse,
Senior Network Engineer

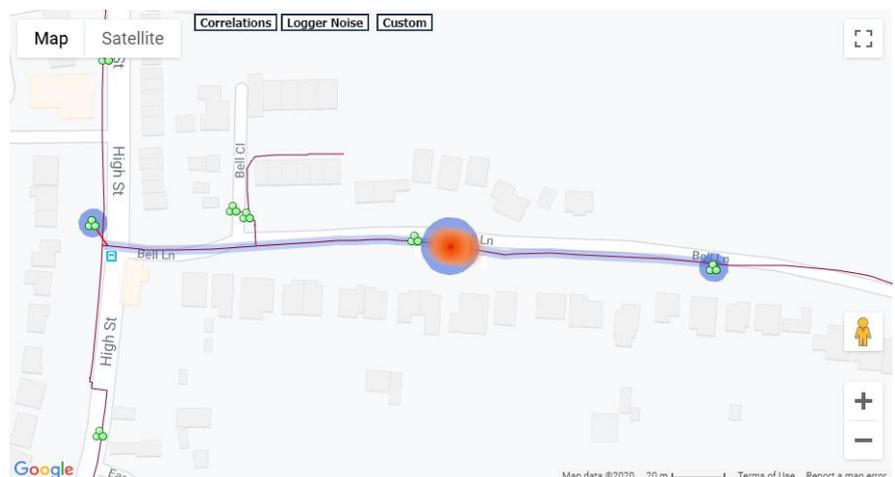


Figure 1 - MULTISCAN point of interest

Pinpointing the leak

Despite this new information, no audible noise could be detected during the daytime – more proof of the leak position was needed.

The AQUASCAN 620 Laptop Correlator was now utilised to correlate over the same section of pipe on Bell Lane that the MULTISCAN sensors had produced the area of interest.



Figure 2 - AQUASCAN 620L Correlator

The result was a very good peak in a position that corroborated the MULTISCAN result.

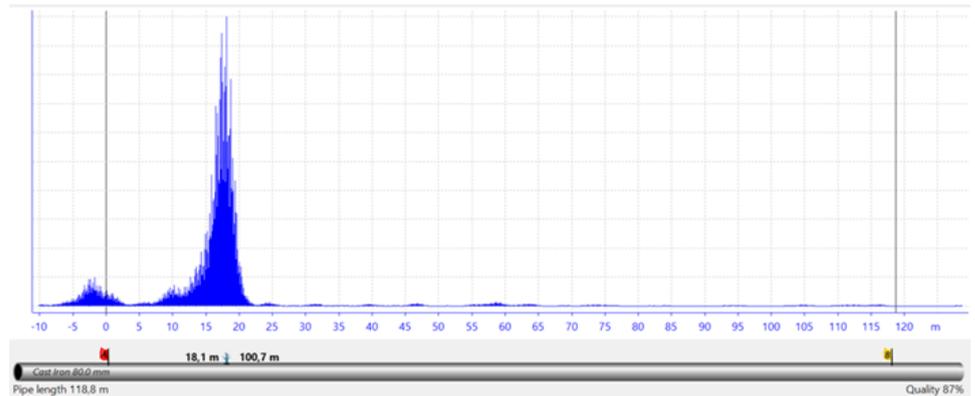


Figure 3 - Correlation graph - Point of interest verified with AQ620L

Verifying and excavating the pinpointed leak position



Figure 4 - AQUASCOPE 3 Ground Microphone

Top noise was still an issue as the leak did not seem to be generating any sound in the vicinity of the peak positions. Background noise from nearby airport and motorway made the use of traditional methods very difficult.

The AQUASCOPE 3 ground microphone was now utilised to pinpoint the leak. Top noise was deciphered from background noise by adjusting the filter range on the AQUASCOPE. The leak position was marked up in blue paint (position matched the one produced by MULTISCAN).



Excavation revealed a leak on a communication pipe at the location indicated by the Gutermann devices. The pipe was made of black poly, which is notoriously difficult to find leaks on due to its poor sound propagation. This leak had clearly been going for a while as it was finding its way out of the ground over 100m away on the High Street. Since the repair, this water has dried up and stopped showing.



Figure 5 - Excavation reveals leak on plastic communication pipe

By utilising a selection of Gutermann equipment in a holistic approach, Affinity Water were able to localise, locate & pinpoint this tricky leak on a plastic supply pipe.

***GUTERMANN would like to thank David Piesse and Wayne Novelli from Affinity Water for providing us with photos and for continuing to be great customers and advocates for GUTERMANN leak detection equipment.**

