



Emergency Services Prove Effective in TN



The Technology.

Phocus 3 is an acoustic noise logger that automatically detects and localizes leaks on any water distribution network. The loggers are deployed underground on existing assets and utilize low power radio and/or infrared communications without the need for costly above ground technology.



The loggers listen for any potential leakage. The data is retrieved and viewed daily, which can be easily downloaded to any PC for further analysis if required.

Enigma is a non-real time correlating system that combines noise logging and correlation into one system. It is the preferred technology for complex, noisy, and busy leak areas.

Mikron3 is a wireless ground microphone and listening stick kit designed for leak pinpointing and confirmation. The Mikron3 listening stick was utilized to pinpoint BUD's leakage.

The Situation.

In October 2018, the Cross Community development in Blountville, Tennessee reported low-pressure water issues to the local utility, Blountville Utility District (BUD). The areas of primary concern were the higher elevated areas of the community where BUD customers utilize booster pumps under normal conditions. BUD initially took matters into their own hands by conducting acoustic leak detection in the development. The utility found, executed, and repaired several leaks. Despite BUD's concerted effort to pinpoint the source causing disruption, the pressure issue persisted in the development. BUD then contracted Matchpoint to execute emergency leak detection services for further investigation. Matchpoint quickly mobilized to address BUD's concerns.

The Action.

The objective of the survey was to help identify areas of leakage that were contributing to the loss of adequate water supply and pressure for customers within the problem area.

The survey was conducted on roughly 16 percent of BUD's distribution system, approximately 22.6 miles of pipeline. MWAM used a combination of visible observations, acoustic, and correlation leak detection techniques and technologies throughout the 6-day leak detection survey.

The pipe material and natural environment of the suspect area posed complications for the implementation of standard acoustic leak detection practices. The area had a few

challenges: the network was composed of primarily plastic (PVC) pipe which is a material inherently difficult for acoustic technology due to the way sound travels in plastic; there was significant background noise due to the pipeline's close proximity to a busy highway; and furthermore, when the PVC line was installed, it was laid on top of bedrock at the leak point which was located on the underside of the pipe. All of these site challenges combined with low pressure further complicated the leak detection process. Awareness of these factors influenced the meticulous manner in which Matchpoint approached the problem.

Due to the complexities of the suspect leak location, Matchpoint recommended in-depth valve step testing in the area once it was determined which valve fed the eastern-side of the Cross Community system. This particular initiative was taken by BUD personnel on-site to isolate the situation in an expeditious manner. Although pressure testing was performed under Matchpoint recommendation, it was more or less to determine existing pressure and stability at points within the community. BUD's dedication to solving the water pressure issue and willingness to be engaged in the process is a large contributor to the success of the project. Effective communication between Matchpoint and the utility allowed for the quick isolation of particular parts of the distribution system, ultimately allowing our team to pinpoint the four leak points using acoustic correlation technologies.

The Results.

Combined, the four leaks are originally estimated at 45 gallons per minute of water loss. When BUD excavated the leak points, it was found the combined leaks were actually at approximately 155 gallons per minute, equating to roughly 81.5 million gallons of annual water loss. Once repairs are made both the utility and Cross Community residents will reap the benefits of a fully pressurized system.

**Got a leak that you can't pinpoint?
Call Matchpoint.
We'll find it.**

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