

Sounding out the problem

LeakFinder-ST correlator quickly detects large diameter water main leakage in Magnitogorsk, Russia

Magnitogorsk is an industrial city on the South Eastern side of the Ural Mountains in Russia and is home to one of the largest steel producers in the country. The local municipality provides water and sanitation to 420,000 residents across a 600km water supply network using steel pipe with diameters between 100 and 1,000mm.

In recent years, the community has been having issues with water leakage, especially from large diameter mains. One of the biggest difficulties encountered was locating these leaks during extreme weather conditions, with temperatures dipping down to -40° Celsius. Their current leak noise correlators were insufficient, and both the municipality and steel manufacturer realised they needed to look for a more advanced leak detection solution.

Compact solution

Prometey, headquartered in St. Petersburg, is a company known for serving the local industrial enterprises with the latest technology in the field of non-destructive diagnostics. Sergey Koshkin, technical director of Prometey, went on site to determine the challenges that needed to be addressed in order to accurately pinpoint leaks on various pipe materials and with varying diameters. Given the rugged terrain, Koshkin needed a compact solution that was easy to transport. After Koshkin's evaluation of the distribution network, he recommended Echologics LeakFinder-ST correlators as the best option.

Prometey conducted a two-day technical training with the town's chief engineer, chief technologist and head of leak detection. It began with highlighting the principles behind the acoustic correlation capabilities of the technology and how it can be used to pinpoint leaks.

Designed by engineers for engineers, the LeakFinder-ST correlator uses advanced signal processing and acoustic sensor to locate leaks and even the quiet narrow-band low frequency leaks, long before they become detectable by conventional detection methods. The automatic noise filter and velocity calculator is highly accurate in identifying leaks on any material of pipe and avoiding "dry holes". The interface was perfected in the field through collaboration with end users and is simple to operate. "Anyone that has used Microsoft Windows can easily and confidently operate the LeakFinder-ST correlator," said Koshkin.



LeakFinder-ST connected to transmission line



LeakFinder-ST is easy to transport

Training

The training covered live demonstration and hands-on testing on the municipality's 500 & 600mm diameter steel transmission pipeline. Known for its speed and accuracy, the noise correlator very quickly identified a point of interest when a peak on the user interface was observed in this 2km pipe section. "The engineers were very pleased with the ease of use and rapid correlation to find the leak. It was clear this would be a simple tool that municipal personnel could use on their own to pinpoint leaks," said Koshkin. The next day, a municipal excavation team was dispatched and the leak was found as pinpointed by the LeakFinder-ST correlator.

"The superior accuracy, ease of use and, most importantly, rugged packaging has given us the privilege of assisting our



Listening for leaks

clients in driving down water loss in the city of Magnitogorsk" concluded Koshkin. The LeakFinder-ST continues to be used weekly or when there is an indication that there is a problem in one of the pipelines. ■

For more information:

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