

ECHOLOGICS[®]

a MUELLER brand

DON'T TOUCH ME

REDUCING
CAPITAL
EXPENDITURE
JUST GOT
EASIER

EPULSE[®]

MONITOR ME

I HAVE A LEAK

REPLACE ME



DETECT



MONITOR



CONTROL



REPAIR

MUELLER

ECHOLOGICS®

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UTILITIES AROUND THE WORLD ARE TURNING TO EPULSE® TECHNOLOGY BECAUSE OF ITS PRACTICAL AND ADDED VALUE APPROACH.



ePulse® technology is the industry's first solution that can identify the condition of distribution and transmission mains, while simultaneously searching for leaks. All without the need for service disruptions.

Condition assessment and the collection of information about buried pipeline assets is simplified with ePulse® technology. The assessment approach does not require access to the inside of a pipe, costly excavations or extensive support from utility field crews. ePulse® technology is cost-effective enough to deploy on a wide variety of pipe diameters from DN100 to over DN1500 and on virtually any pipe material.

For utilities with aging pipeline infrastructure challenges, ePulse® technology is an ideal tool to quickly understand the status of buried assets. Acoustic signals and advanced computer algorithms assign a grade of good, moderate, or poor, based on the actual condition of the pipe segment. Knowledge is power, and knowing the actual condition of buried assets enables utilities to optimise replacement programmes to maximise results.

“OUR BELIEF: IN AN AGE OF SENSORS AND MONITORING, WE SHOULD BE DOING MORE TO UNDERSTAND OUR NETWORK, WHAT ARE THE CAUSES, EFFECTS, AND LONG-TERM IMPACTS ON THE WAY IT OPERATES. WE CAN USE THIS INSIGHT TO DRIVE OUR ASSET MAINTENANCE STRATEGY.”

Daniel Woodworth

Head of Asset Strategy

UTILITY-FRIENDLY CONDITION ASSESSMENT TECHNOLOGY

FOR ANY TOWN, CITY OR WATER SYSTEM OPERATOR.

HOW EPULSE® TECHNOLOGY WORKS

Acoustic sensors are attached to existing contact points, such as fire hydrants, valves or directly to the pipe. A sound wave is induced in the pipeline and travels along the pipe. The acoustic sensors capture the time it takes the sound wave to travel between two sensor stations. The speed at which the sound wave travels is dictated by the condition of the pipe wall.



ACCURATE AND ACTIONABLE INFORMATION

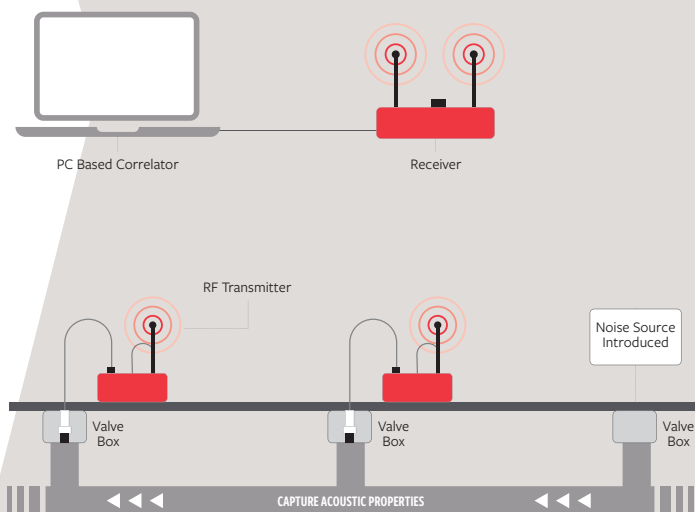
Once the acoustic data is captured, Echologics® data analysts use proven computer algorithms to convert the data into a measurement of the average minimum wall thickness of the inspected pipe segment. For cast iron, ductile iron and asbestos cement pipe, the calculated wall thickness measurement is compared to the original thickness of the pipe to determine the average percentage of wall loss and remaining service life or integrity rating.

SIMULTANEOUS LEAK DETECTION

An added and unique benefit of the ePulse® method is that field engineers can simultaneously analyse the captured acoustic data for the presence of leaks. This increases programme value by avoiding the need to invest, plan, and execute separate inspections. We are a globally recognised leader in leak detection and have surveyed thousands of kilometres of water mains, successfully locating leaks of all sizes.

MONITORING CRITICAL INFRASTRUCTURE

Transmission mains that are reaching the end of the operating life or have a history of ruptures are often difficult to replace. For these high-risk situations, we offer the advanced Echoshore®-TX platform for monitoring. The platform can be applied to any pipe material with a diameter of DN400 or greater and can monitor several parameters from leaks to static pressure.



SIMPLIFIED CONDITION ASSESSMENT

Trained field crews can move rapidly through a water network, collecting accurate and actionable information about buried pipe infrastructure.



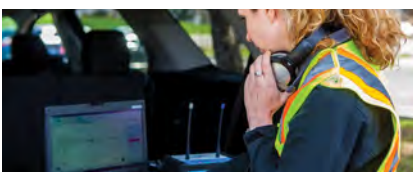
STEP 1: ATTACH SENSOR TO EXISTING PIPE CONTACT POINTS



STEP 2: INDUCE NOISE INTO THE PIPE



STEP 3: CAPTURE ACOUSTIC DATA



STEP 4: COMPUTER ALGORITHMS ANALYSE DATA TO DETERMINE CONDITION OF PIPE

FIELD APPLICATIONS

DEFERRING PIPE REPLACEMENT COSTS

In Nevada, a troublesome 10 km section of mortar lined steel cylinder pipe which supplied major tourist attractions experienced several ruptures over a short time period. Repair crews noticed that the pipe walls had been worn thin due to corrosion. The district expected they would have to replace the entire section at an estimated cost of over \$10 million. Prior to replacement, the district turned to ePulse® technology to verify the condition of the pipe. The inspection revealed that the majority of the pipe was still in good condition, and that only 15-20% of the pipe required replacement, deferring the need to allocate capital cost. In addition, several leaks were identified and quickly repaired.

VALIDATING PIPE REPLACEMENT NEED PRIOR TO EXCAVATION

A large water company in Western Europe selected ePulse® technology to optimise its capital improvement programme. Traditionally, before replacing pipes, the line would be shut down, excavated and samples cut out for physical testing. By replacing this disruptive process with ePulse® technology, the utility is now able to test a larger portion of its system at a lower cost, without disruptions to roads or water supply.

OPTIMISING CAPITAL IMPROVEMENT PLANS

In Washington, U.S., a proactive utility selected ePulse® technology to validate pipe replacement recommendations, based on remaining economic life models. ePulse® technology was selected based on the short time in which field inspections could be completed and the ability of the technology to conduct analysis without service interruption to customers. Through the use of a strategic asset management plan and the information provided by ePulse® technology, the utility was enabled to further optimise pipe replacement timing, and reduce their main replacement budget from \$18 million to \$9 million.

ABOUT US

Echologics develops water infrastructure diagnostic technologies for water loss management, leak detection, pipe condition assessment, and permanent pipeline monitoring. We are dedicated to helping utilities prioritise capital spending, reduce water loss, and avoid catastrophic failures.

For more information about us, or to view our full line of products, please visit www.echologics.com or call International Customer Service at:

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