

## Case Study

# Great Man-Made River Authority SoundPrint Acoustic Monitoring Ajdabiya, Libya

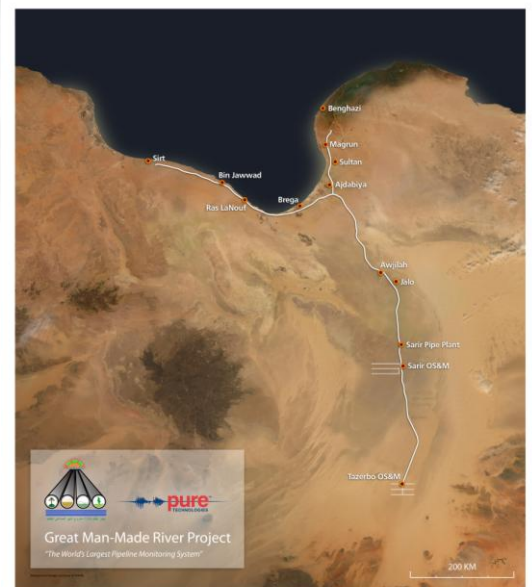
<b>Service:</b>	<b>SoundPrint® Acoustic Fiber Optic</b>
<b>Client:</b>	<b>Great Man-Made River Authority</b>
<b>Project Date:</b>	<b>Ongoing since April 2000</b>
<b>Type of Pipeline:</b>	<b>Raw Water</b>
<b>Diameter:</b>	<b>158-inch (4 meter)</b>
<b>Pipe Material:</b>	<b>PCCP</b>
<b>Length:</b>	<b>1,200 km</b>
<b>Results:</b>	<b>Nearly 35,000 wire breaks reported</b>

With more than 4,000 km of mainly four-metre diameter prestressed concrete cylinder pipe (PCCP) in operation, the Great Man-Made River pipeline is the one of the largest water projects in the world. An aggressive rehabilitation program was required from 2001 to 2005 after the Great Man-Made River Authority (GMRA) experienced five failures on their pipeline.

Thousands of pipe sections were repaired or replaced, and technologies were implemented to assess the condition of the remaining sections.



One of the technologies implemented was acoustic monitoring. GMRA has been using acoustic monitoring to manage its PCCP since 2000. The scope of the monitoring project has grown from just 3 km in 2000 to



more than 400 km in 2009. GMRA is using Pure's Acoustic Fiber Optic (AFO) technology to further expand the monitoring system that will eventually cover more than 1,200 km of pipeline by 2012. AFO provides owners such as GMRA with a cost-effective solution to monitor long lengths of PCCP.

Inspection techniques such as electromagnetic, visual and sounding provide valuable information regarding the baseline condition of a pipeline. A snapshot of the condition of each pipe section is determined, but as soon as the pipe is brought back into service the condition can change. The rate of deterioration for each pipe section can be different, and experience in GMRA and elsewhere has shown that the rate of wire breakage is usually not linear.

Acoustic monitoring provides valuable data on the performance of each pipe section, and the near real-time information is critical for the management of a pipeline constructed with PCCP.