Baltimore City Public Works Intervenes on Pipeline About to Fail

*Acoustic Fiber Optic monitoring system identifies PCCP wire breaks and alerts city staff before critical failure*

**Challenge**
Baltimore City Public Works (The City) operates the Gwynns Falls/Southwestern Transmission Main, made of 54-inch Prestressed Concrete Cylinder Pipe (PCCP), which plays an important role in providing water to customers throughout the city. In order to ensure quality service for customers and prevent costly disruptions, The City needed to monitor this pipeline using advanced technology.

**Solution**
Baltimore City contracted Pure Technologies in March 2012 to complete an electromagnetic (EM) condition assessment using the PipeDiver® tool to determine the baseline condition of the pipeline. The tool is free-swimming and able to locate and quantify the amount of wire breaks in PCCP. Broken wires in this pipe type are the main indication that the pipe will eventually fail.

The same pipeline was already equipped with an Acoustic Fiber Optic Monitoring System installed during a 2007 project with Howard County. The system gives The City an early warning when prestressed wires break in their PCCP, ultimately allowing intervention on rapidly deteriorating pipes to prevent catastrophic failure.

**Results**
The results from the baseline EM inspection showed that the pipeline has broken wires in several sections. In the months following the inspection, the situation became critical when the AFO system detected a string of wire breaks in the same area, which led to the recommendation to remove a badly distressed pipe section. After the city shut down and dewatered the transmission main, Pure’s team mobilized on site to inspect the distressed pipe section more closely.

- The verification confirmed the location of the wire breaks through impact testing
- A visual inspection identified two large cracks in the pipe creating a hollow section; this confirmed that a failure could have occurred at any time
- The damaged pipe was removed from the ground and the pipe was returned to operation on Saturday, July 21, 2012
- Preventing the failure allowed The City to avoid significant environmental damage, service disruption and financial cost

Learn more about how Pure’s Pipeline Monitoring Solutions are working for utilities around the world to prevent water and wastewater pipeline failures at [www.puretechltd.com](http://www.puretechltd.com)