

## Case Study

### Schantz's Spring Pipeline, City of Allentown, Pennsylvania

<b>Client:</b>	<b>City of Allentown, PA</b>
<b>Project Date:</b>	<b>October 14, 2008</b>
<b>Service:</b>	<b>SmartBall Leak Detection Technology</b>
<b>Type of Pipeline:</b>	<b>Raw Water Main</b>
<b>Diameter:</b>	<b>30-inch</b>
<b>Length:</b>	<b>5 miles</b>
<b>Pressure:</b>	<b>7 to 22 psi</b>
<b>Pipe Material:</b>	<b>Cast Iron with Lead Caulked joints</b>
<b>Results:</b>	<b>39 leaks</b>

The City of Allentown, PA retained the services of Pure Technologies (Pure) to perform a SmartBall survey of the Schantz's Spring Raw Water Main. The Schantz's Spring Pipeline is primarily a Cast Iron Raw Water Main with lead caulked joints that transmits partially treated water from a reservoir to a treatment plant. The pipeline has been in service over 100 years and has a typical operating pressure that ranges from 5 psi to 20 psi. During the SmartBall survey the pressure in the pipeline was 7 psi to 22 psi. The purpose of the SmartBall survey was to identify any locations where the main may be leaking.

During the survey the SmartBall device was inserted into the pipeline through the open end of the pipe inside a storage tank at the upstream end of the line and released into the flow of the pipeline. In order to achieve the insertion, the City lowered the level of the water in the storage tank to 2 to 3 feet, the ball was placed into the pipe and plunged into the system. The SmartBall inspection proceeded once the pump operation resumed consistently, and ended at a 4-inch tap and gate valve near the pump station prior to the treatment plant. During the SmartBall survey the pressure in the pipeline was 7 psi to 22 psi.

The SmartBall traversed the pipeline in approximately 6 hours, at an average velocity of 1.2 feet per second. During the evaluation of the data, Pure detected 39 acoustic anomalies that resembled leaks in the main, ranging from very small to large. Three (3) leaks were recommended for investigation and repair as a matter of priority. One of the leaks has been confirmed and the City is planning to repair other major leaks in the main.



*Water tank where the SmartBall was inserted into the Schantz Spring Pipeline for the City of Allentown*