

CUSTOMER CASE STUDY

Yorkshire Water finds the leaks faster with predictive maintenance and intuitive visualization from AVEVA™ PI System™

Yorkshire Water - www.yorkshirewater.com
Industry - Water supply and treatment

Goals

- Predict and prevent leaks
- Avoid regulatory fines
- Improve customer response times

Challenges

- Aging infrastructure
- Large system
- New regulations

Results

- Identifying and responding to leaks much faster
- Reduced costs
- Meeting regulations

Solution

- AVEVA PI System
 - AVEVA™ PI Server
 - Data archive
 - Asset framework
- AVEVA™ PI Vision™
- Enterprise agreement

With its revamped deployment of AVEVA PI System, Yorkshire Water can predict leaks four and a half days earlier than it could before – finding them one and a half days before they reach threshold targets. Before Yorkshire implemented its new system, leaks threatened to overwhelm it with regulatory fines, customer complaints, and maintenance costs. Now, thanks to AVEVA PI System, Yorkshire is cutting costs, meeting regulatory goals, and serving customers more efficiently.

Catching up with new regulation

Yorkshire Water produces 1.3 billion liters of clean water and treats one billion liters of wastewater daily. It serves five million domestic customers and 136,000 business customers through 83,000 kilometers of pipeline – enough to circle the globe twice. With such an extensive system, even a single leak can upend quality goals. For example, before Yorkshire implemented AVEVA PI System, one difficult-to-find leak led to over 4,000 customer complaints or inquiries.

Worse still, every leak over the target threshold netted Yorkshire a \$4,000 fine. Meanwhile, the UK Water Services Regulation Authority set new regulatory targets for 2017, and Yorkshire was at risk of missing performance targets. “Ultimately, that’s 65% of our target for the year gone in just one event,” said Andrew Sewell, Telemetry Manager at Yorkshire Water, “so you see how we need to get more predictive with our analytics information to support leaks.”

As part of its rNet project, Yorkshire had already deployed AVEVA PI System in 2012 to monitor the water pressure and flow rates of its pipelines in real time. With 4,500 flow and pressure sensors and flatline notifications throughout the system, AVEVA PI System had already paid big dividends, but with the new regulations, Yorkshire needed something more.

AVEVA PI Vision and AVEVA PI Server make new goals possible

To detect problems faster and keep up with the new regulations, Yorkshire implemented the Visible Network Project. The project committed to reduce leakage by 10 million liters and water interruptions by 4,000 liters daily. To meet these ambitious goals, Yorkshire partnered with Capula, an automation and real-time integrator in the United Kingdom, to reevaluate its internal processes and revamp its AVEVA PI System infrastructure.

With Capula’s help, Yorkshire deployed new AVEVA PI System technology, including AVEVA PI Vision, to gain better visibility into its pipeline infrastructure. The team increased the number of pressure and flow sensors to 6800 to improve data profiling and developed five integrated modules to deliver full functionality.

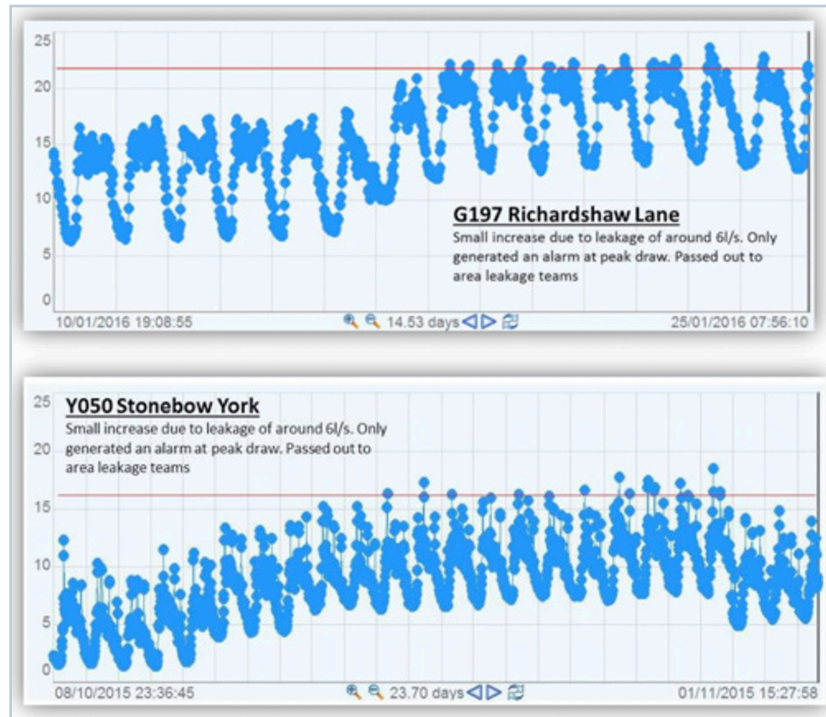
Now, an asset configurator populates AVEVA PI System, and the asset update function syncs data across the different asset structures and automatically updates them in the asset framework of AVEVA PI Server. The analytics engine manages flow and pressure models based on seasonal variations and creates event frames in the asset framework when there’s a leak. Now plant managers and operators can visualize data in the leakage viewer get tremendous real-time insight into what’s going on underground.

“Using [the asset framework] really was a key enabler for the project and allowed it to be realized fully and automated in its data structure,” said Alistair Norman, Business Sector Manager for the Operational Intelligence Division at Capula.

“A challenge is to predict leakage more efficiently within our organization. This is really to ensure our customers aren’t impacted by any outages in our distribution networks.”

- **Andrew Sewell**

Telemetry Manager, Yorkshire Water



Faster Leakage Detection: AVEVA PI System allows Yorkshire to detect leakage problems a day and a half before the threshold alarm identifies the issue.

Responding four days faster

Now, Yorkshire identifies leaks one and a half days before they reach threshold limits, and users receive alerts four and a half days faster than they did before. “You can see from these examples that significant time would be saved, and dispatching teams to site to investigate the leakage event would have been a lot quicker,” Sewell noted. Thanks to AVEVA PI System, Yorkshire is now on track to achieve its targets.

Given the success of the project, Yorkshire is looking to integrate other operational data, such as energy and temperature, into AVEVA PI System as well as integrate this information into its work planning system and to connect it to mobile devices.

“Using PI System’s asset framework was a key enabler for the project and allowed it to be realized fully and automated in its data structure.”

- **Alistair Norman**

Business Sector Manager for Operational Intelligence, Capula

For more information about Yorkshire Water and AVEVA PI System, watch the full presentation [full presentation here](#).