



Case Study

Yorkshire, UK

Aquestia's predictive smart water air valve prevents pollution incident.

Background

In 2020, a stretch of the River Wharfe in Ilkley became the first to receive designated bathing water status by the Environment Agency. The bathing water site, known as 'Wharfe at Cromwheel, Ilkley', is hugely popular, with over 1,700 people a day paddling, swimming and using the riverbank at peak times.

Challenges Potential for undetected leakage

At Ilkley, there were two primary risks caused by a FOG (fats, oils, and grease) blockage in the sewerage pipe. First, it prevented the air valve from functioning, creating a risk of the pipe bursting due to vacuum or over-pressurization. Such a burst would have caused considerable damage and pollution.

Secondly, the blockage had caused the air valve's float to cease functioning. The float acts to seal the valve, and if it got stuck, there was a risk that raw sewage would pour out from the valve itself.



Solution Forewarned is forearmed

Yorkshire Water, accompanied and advised by Aquestia's UK partners, AVK-UK, decided to install an Aquestia ARISENSE smart air valve at the site of the riverbank to generate early alerts of potential sewage leaks so that they could be avoided.

The ARISENSE includes internal sensors to track air valve performance and issue alerts of any internal events, and external sensors for monitoring the network, such as a pressure sensor that indicates pressure along the pipeline. This provides feedback on various key operational parameters, including overflow, leakage, blockage, pressure, tampering, and tilt/shock. If any of the sensors, internal or external, is activated, email and text messages are sent to all subscribed users.

Working closely with the client and the installer, AVK-UK ensured that the smart air valves met the requirements of all parties, and complied with Yorkshire Water's cyber-security protocols.

Results Pollution averted

ARISENSE has already proven its value. In one particular incident, the ARISENSE smart air valve overflow alarm alerted Yorkshire Water to a risk, and they were able to clear the blockage by cleaning the valve internals, quickly returning the sewerage pipe to full capacity.

The random and unpredictable nature of FOG blockages means that reactive maintenance can be more effective than planned maintenance. With the ARISENSE, the Ilkley community can continue to swim safely, and enjoy themselves at 'Wharfe at Cromwheel, Ilkley', without the fear of pollution.

