



Case Study

Wessex Water Case Study

Aquestia's predictive smart water air valve, **ARISENSE**, detects issues before they occur.

Background

The River Banwell flows into the Bristol Channel at Woodspring Bay, a few miles north of Weston-super-Mare. A sewerage line runs close to the River Banwell, not far from its estuary. The local water supply and sewerage utility company is Wessex Water.



Challenges Potential for undetected leakage

Due to the proximity of the sewer air valve to the river and estuary, any undetected leakage has the potential to develop into a major contamination incident. But, the air valve is located well away from minor roads, accessible only via more than a mile of muddy trackway, making it hard to monitor. Wessex Water decided to install an **ARISENSE** smart air valve at the site in order to provide the necessary monitoring to prevent environmental issues.

As with many assets that are situated in chambers below ground, communications for the smart system presented a challenge. Locating the antenna within the chamber would provide only an intermittent signal, so the antenna would have to be affixed to the outside of the chamber.



Solution Creative thinking to meet unique site conditions

Creative thinking was required to adapt the solution to the specific characteristics of the site.

The **ARISENSE** smart air valve was installed with a manhole pit-level float switch sensor, enabling Wessex Water to know in real time if the manhole chamber of the air valve becomes flooded.

To overcome the communication issues of remote locations, an external antenna was discretely installed above the manhole cover, at a height of 5 cm.

The **D-025LNS-AS** DN80 (3") **ARISENSE** was specially specified with a non-slam feature to prevent surge in the event of rapid filling of the system, enabling the valve to operate under a wide range of system conditions.

Given the sensitive location of the **ARISENSE** smart air valve, a special low-pressure float and seals were specified, to ensure that the valve seals at 5 cm water column volume.

Results Crisis averted

The installation was regularly checked over a period of two months. At 6.20 am on the morning of 14th December, Wessex Water received an alert via SMS and email from the air valve, indicating that there was water in the chamber.

A member of the Wessex Water wastewater air valve maintenance team was dispatched to the site, where it was discovered that the chamber had flooded due to water ingress through a duct. This had been exacerbated by high ground water levels. As a result of the alert, the duct was sealed, preventing any further issues.

