



## APPLICATION REPORT Water & Wastewater

### Custody transfer flow measurement in water distribution network

- Battery powered stand alone solution
- Custody transfer of potable water subject to MID MI-001 for water meters



#### 1. Background

Evides Waterbedrijf N.V., one of the largest water companies in the Netherlands ordered Visser, Smit and Hanab to build a drinking water pipeline from De Staart in Dordrecht, the peninsula where also KROHNE Altometer is located, to Zwijndrecht. Visser & Smit Hanab develops, builds and maintains connections, networks and installations for water and energy. Evides sells so-called soft water to another Dutch water company, as part of a project to solve the hard-water problem of Zwijndrecht. For the transport of the potable water, a new pipeline was needed between the distribution networks of the two water companies. The building of the pipe was not an easy task as it runs through a densely populated area and it crosses the very busy river Merwede. Over a length of 1450 m / 0.9 mi the pipe has been installed at a depth of 26 m / 85.3 ft under the river.

#### 2. Measurement requirements

Accuracy has been an important selection criterion for selecting a flowmeter, because it concerns the custody transfer of potable water between two companies. The flow measurement is subject to fiscal regulations and therefore requires a certification according to the Measuring Instruments Directive 2004/22/EC MI-001 for water meters.

At the location of installation there is no mains power available, so a battery powered, stand alone, water meter was preferred. Other requirements of the customer for the water meter included the availability of approvals for drinking water, protection against submersion in water (IP68), and a high turndown ratio. The maximum flow rate in the pipe is 650 m<sup>3</sup> / 171,711 US gal per hour.

**KROHNE**



Pipeline crossing the river Merwede



Final installation of the meter



WATERFLUX 3070

## 3. KROHNE solution

As a result of its innovative rectangular design, WATERFLUX 3070 has a very high accuracy over a wide turndown ratio, an improved flow profile allowing for very small inlet and outlet sections and low energy consumption. The stand-alone water meter has a long battery life time of up to 15 years, due to its very low energy consumption. The battery powered, stand alone, WATERFLUX 3070 offers water utilities opportunities for improving revenues because of high accuracies at high and low flow rates and because the water meter maintains its initial accuracy over a long period of time. The Rilsan® liner of the flow sensor is widely accepted and approved by the water industry for potable water applications. The WATERFLUX 3000 sensor is suitable for IP 68 mounting, allowing the meter to be temporary or continuously submerged in water. KROHNE's WATERFLUX is superior to mechanical water meters in terms of maintenance, long term stability and pressure loss as it has no internal moving parts, no wear and is obstruction free. Electromagnetic water meters maintain their accuracy over time and due to their robust construction the time spent on routine maintenance and service activities can be reduced to a minimum.

## 4. Customer benefits

"Our partner KROHNE, with whom we already have a good cooperation for many years, has developed a new product that met our needs", says Werner Boom, Business Change Manager Metering of Evides. "We have decided to install the WATERFLUX, because the KROHNE products have a high degree of reliability and this new meter completely fitted our needs and demands. This flow meter does not require an external power supply; the battery provides enough power for 15 years, and the data transfer takes place via a GSM module. The rectangular design provides a unique homogeneous magnetic field. This ensures a high accuracy within the measurement range and virtually has no pressure loss. It is an innovative and durable meter with a high degree of reliability."

## 5. Product used

### WATERFLUX 3070

- Battery-powered electromagnetic water meter
- Approved for custody transfer (OIML R49, MID MI-001)
- Suitable for burial installation (IP68)
- Wide range of drinking water approvals
- Excellent performance in low flow conditions and over a wide flow range
- No inlet and outlet runs required



### Contact

Would you like further information about these or other applications?

Do you require technical advice for your application?

[application@krohne.com](mailto:application@krohne.com)

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