



Finding a flow measurement solution for sewer grid monitoring in Wyoming Valley

Overview

The Wyoming Valley Sanitary Authority (WVSA) provides wastewater treatment services to more than 172,000 residents in Luzerne County. Since being founded in 1962, they have grown to service 36 municipalities.

Finding an inflow and infiltration solution.

At WVSA, they needed a flow measurement solution that could measure inflow and infiltration (I&I) in their sewer system. Infiltration and inflow is excess water from groundwater and stormwater that finds its way into the sewer system. This water is not meant to be part of the wastewater treatment process and creates an unnecessary burden on the collection and treatment system.

When the WVSA team was searching for a solution, they reached out to different companies to perform flow model studies. Flow model studies performed by outside companies can provide strong results but can come at a

high cost. They had reached out to different companies but found that the increasing cost of using those outside companies meant this was no longer a viable option. This pushed the need to have a more accurate and reliable solution in place.

These mounting costs encouraged them to seek guidance from another company, Pulsar Measurement. When they reached out to Pulsar Measurement, they spoke to members of the Support team who suggested that they consider using our MantaRay.

Why did they choose the MantaRay?

Pulsar Measurement's MantaRay is a portable area velocity flow meter that can be used for flow surveys in partially-full, full, and surcharged sewer pipes. It also works for stormwater, irrigation water, and natural streams. The MantaRay is easy to set up and install. The single submersible sensor with no moving parts mounts to the bottom of the pipe or channel, and the meter is easily configured for the end user's needs by entering the channel shape and size on the user-friendly keypad interface. The MantaRay automatically computes and displays the flow rate and total on its backlit display based on the measured level and velocity. The MantaRay also comes with a built-in 2-million-point data logger that gives date and time-stamped flow values from 10-second to 60-minute



"Pulsar has a great support team."

The WVSA team

intervals. This data can also be captured when the sleep mode function is activated. This function helps extend the life of the meter battery by suspending non-essential functions while in sleep mode.

In the case of WVSA's application for measuring I&I, when the Pulsar Measurement support team suggested the MantaRay, they also suggested using the corresponding pipe bands for mounting the QZO2L sensors in the sewer. The pipe bands were installed at various points in the sewer system with the MantaRay to sample flow. This complied data was helping to determine areas of concern where the pipe might be cracked or deteriorated, allowing for groundwater infiltration into the sewer system. To keep a running log of how the MantaRay was operating at the various points, the WVSA team GPS marked all the measurement points on a table to create a working sewer model to prove the installation was successful.

Success with an ultrasonic flow measurement solution.

After the WVSA team ran the working model for a few weeks, it solidified that the Pulsar Measurement MantaRay with Pipe Bands were the right solution for their application. The MantaRay was not only able to achieve the results that they were receiving from other servicing companies, but it also significantly reduced the costs that they were spending on their application. After helping WVSA find the MantaRay, a representative from the Pulsar Measurement Support team said, "What a great way to create a sewer model without breaking the budget". The WVSA team was not only pleased with the cost-effective solution, but they were also happy to have worked with our Support team.

This successful sewer model showed the WVSA team it is possible to get the results that they needed without too much expense. The results were so valuable that they purchased six MantaRay meters and multiple pipe bands for their sewer modeling and are looking to purchase dam bands for the low flow applications in their sewer system.

More Information

MantaRay: <https://pulsarmeasurement.com/mantaray>

Wyoming Valley Sanitation Authority: <https://www.wvsa.org/>



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