



# HydroRanger controller monitors plant influent, basin-to-basin flows and wet wells

## Challenge

In today's economic environment, local municipalities need to control their budgets now more than ever. In an effort to save dollars, many medium to small water and wastewater treatment plants strive to improve efficiency while controlling design and maintenance costs.

A waste treatment plant on the East Coast of the United States wanted to enhance their entire plant by improving the monitoring of in-plant flows by keeping track of the retention time in basins throughout the plant process.

## Solution

To achieve their goals, plant staff not only relied on their in-house knowledge, but also the expertise of their suppliers. Working closely with a local integrator, the local Siemens representative specified the dependable HydroRanger 200 controller with XRS-5 transducer to accurately monitor all open-channel flows from basin to basin. The HydroRanger controller was also selected to monitor and control on-site wet wells, and to measure the levels in their day tanks and process vessels.

The HydroRanger controller with Sonic Intelligence® gave the customer the right answer even in

applications with changing conditions. Using the available signal outputs from the HydroRanger controller, all flows were tracked by the control system. With tighter control, money can be saved in many ways, including shorter retention times, less chemical usage, and reduced dewatering efforts.

When working with the on-site wet wells, the flexible, pump routines that are available with the HydroRanger 200 came into play. Pump routines were selected that allowed the user to save power costs and to extend pump maintenance intervals. Pump life was extended by applying lead-lag and alternation routines. Pit maintenance for plant personnel was also reduced by using the "scum ring reduction" function in the HydroRanger programming.

Reliability of the measurement was very important to the customer. At the beginning of the project, the integrator had a long-standing relationship with another supplier of ultrasonic level and flow measuring instruments. After working with the local Siemens representative, the integrator decided to look into Siemens products at other installations. The integrator discovered the value in Siemens products, not only to the customer but to themselves. The elimination of downtime meant savings to end user and the integrator. With fewer unpaid service calls due to products that did not perform under changing process conditions, the integrator was saving time and money as well.

Process Instrumentation & Analytics

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## Benefits

### Cost Savings:

- Tighter system control saves time and money by reducing process retention times, chemical usage and dewatering efforts.
- Flexible pump routines reduce power costs and extend pump maintenance intervals
- Reduced downtime means savings for the end user and the integrator

### Reliable measurements:

- Sonic Intelligence® provides the correct answer even in applications with changing conditions
- Increased measurement reliability means fewer service calls

### Local service and support:

- Service and support are available in your neighborhood. Siemens extensive global coverage means you get support when and where you need it.

## About the HydroRanger Level Controller

HydroRanger 200 is an ultrasonic level controller for up to six pumps and provides control, differential control and open channel flow monitoring.

For water authorities, municipal water and wastewater plants, the HydroRanger 200 controller is an economical, low-maintenance solution that delivers control efficiency and productivity needed to meet today's exacting standards. It offers single point monitoring with all models, and optional dual-point monitoring with the six-relay model. As well, it has digital communications with a built-in Modbus RTU via RS-485.



The standard six-relay HydroRanger 200 controller will monitor open channel flow and features more advanced relay alarming and pump control functions as well as volume conversion. It is compatible with SIMATIC PDM, allowing for PC configuration and setup. Sonic Intelligence® advanced echo-processing software provides increased measurement reliability. The optional one or three-relay models provide accurate level measurement functions only; these two models do not provide open channel flow, differential level measurement or volume conversion functions.

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