

WASTEWATER MONITORING EQUIPMENT FOR AN AIRPORT GROUP



CAS DataLoggers recently provided the wastewater monitoring solution for a major airport support group whose fluid run-off threatened to endanger the aquatic ecosystem near the airports. They needed a device capable of monitoring fluid discharges into local waterways. The company routinely sprayed [de-icing](#) and anti-icing solutions onto their aircraft before they took off when conditions were conducive to ice formation as mandated by FAA guidelines. Between 100 and several thousand gallons of de-icing fluid were used per aircraft application. While a portion of the fluid stuck to the planes, approximately 75% to 80% of the treatment

would flow into the surrounding environment as run-off.

The bases of many de-icing fluids contain propylene and ethylene glycol which is also used as antifreeze in cars. While the de-icing solutions were being reformulated to be less toxic, there was still concern about the potential impacts of the fluids on the local environment. As government agencies were developing water run-off guidelines for the airport de-icing procedures, this group was going to great lengths to monitor their run-off to accommodate future regulations and lessen the environmental impact.

INSTALLATION

CAS DataLoggers applications engineers determined a [DT82](#) data logger equipped with an LTE cellular modem connected to an ultrasonic flow meter could immediately

provide the airport remote online access to both current and historical data on discharge and flow volume. The DT82 system featured analog, digital and serial sensor interfaces, local data storage, smart power management, and batteries all incorporated into a single unit. The data recorder also intelligently controlled, powered the sensors, and provided the necessary calculation to derive both the flow rate and cumulative flow volume. Data was transmitted from the data logger which was located near the wastewater discharge point to the company's server via the Microhard LTE Cube cellular modem. The wastewater flow was captured by an ultrasonic open channel flow meter which provided two 4-20 mA outputs, one for the flow velocity and one for the liquid level.



Using this data along with the information on the cross-sectional area of the discharge pipe, the DT82 could calculate the flow rate and totalize the volume to capture and measure open channel flows. The dataTaker was mounted in an IP67 weather-resistant enclosure, guaranteeing extreme durability. It had ultra-low power requirements, and the unit was further supplemented by solar power.

USAGE

The dataTaker's many added capabilities helped staff to monitor the wastewater run-off more efficiently. For ease of use, airport staff could remotely configure the logger, and view both live and historic sensor data. The dEX2 software provided with the dataTaker provided an easy-to-use tool to configure the data logger, build dashboards, create graphs, and download stored data.

BENEFITS

The customer instantly benefitted from the installation of the DT82 wastewater monitoring system in several key ways. The data logger eliminated the complexity and cost of manually collecting and organizing the data from the airports' remote sensors. This complete solution was rapidly installed and implemented. Easy operation by personnel without relying on IT infrastructure became apparent as well. The advanced data display features allowed the airport group to more easily and efficiently monitor the run-off. Alarm conditions and recipients lists could be created and alarms could be distributed via email or SMS text message. Each measurement alarm could be independently enabled or disabled, and all alarms were stored locally as well as transmitted to the central monitoring points.

For more information on the [dataTaker DT82](#), or other [environmental monitoring](#) applications, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or [request more information](#).