

## Reduce Costs While Meeting Permits with APOLLO's UV Disinfection

Aquasight's APOLLO UV disinfection module was a game-changer for a customer's wastewater treatment plant, providing invaluable insights into the UV process that enabled operators to better understand the system and optimize their control strategy. Using APOLLO's Smart UV Advisor, plant staff were able to easily quantify their real-time and historical cost and energy savings potential. Operators can not only identify the extent of over-dosing in their UV process but can also now confidently adjust their UV dosing system without impacting permits, save on energy costs, and extend equipment life.



### THE CHALLENGE

The customer had been struggling with maintaining accurate data quality, optimizing energy consumption, and understanding the response of their UV dosing system to flow and setpoint changes. These issues resulted in operational inefficiencies primarily in the form of excessive UV dosing. Specifically, the UV system's unbalanced UV intensity levels and lack of intuitive control parameters left operators and maintenance personnel in the dark and erring on the side of over-conservative practices. Ultimately, the plant was looking for a comprehensive solution that would provide process and equipment recommendations, and a strategic approach to maintaining and optimizing the UV system.

### KEY POINTS

- APOLLO flags data quality issues and notifies operators.
- APOLLO monitors UV health for proactive and predictive maintenance.
- APOLLO identifies the gap between actual and advised UV dosage operation and quantifies opportunity cost.
- APOLLO improves the operator knowledge on the UV disinfection process.



## BENEFITS

Aquasight's APOLLO UV disinfection module provided a customer with a holistic and insightful approach to managing their UV system. The benefits included increased efficiency by fine-tuning UV dosage and bank schedules, reduced energy consumption and associated costs, and increased confidence in data quality and accuracy for better decision-making.

## SOLUTION

APOLLO increased the customer's field of view in their UV system, provided real-time dosage advice based on engineering principles, and monitors/improves equipment health by issuing alerts when poor bank conditions are detected.

01

### Data Quality and Calibration

APOLLO highlighted previously undetected UVI sensor issues, enabling maintenance to prioritize and hone their efforts.

02

### Optimization Potential

Operators could quantify the optimization opportunity lost each month and use APOLLO to guide their bank run scheduling and setpoints to lower energy use.

03

### Maintenance and Equipment Recommendations

APOLLO identified a need for additional maintenance steps and detected bank-specific lamp degradation. Aquasight also recommended UVT measurements and power meters to enhance their operational potential.



## RESULTS

### Enhanced Operational Efficiency

Operators now have improved control over the system and can optimize dosing by using low-intensity banks during lower flows and higher-intensity banks (or bank combinations) during higher flows.

### Reduced Energy Consumption

APOLLO's Smart UV Advisor identified that actual dosages were, on average, 56% higher than the maximum advised dosage, indicating significant energy savings potential.

### Improved Data Quality and Accuracy

APOLLO made it easy to identify inconsistencies in sensor outputs and prioritize maintenance and cleanings based on performance.

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