

Abstract

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Title

Algal dashboard: integrating routine and online data for cyanobacterial management

Description

The use of algal sensors installed at the inlet of water treatment plants can provide water source managers, operators, and technical personnel with the ability to react to changing conditions such as an increase in cyanobacterial numbers entering the plant. Algal sensors measure fluorescence response based on the target parameter such as chlorophyll-*a* or phycocyanin and can be linked to cyanobacterial numbers. However, the use of these algal sensors does not provide a complete understanding of the impact of an algal or cyanobacterial event at the water treatment plant such as incoming taste and odour or toxin concentrations. Without understanding what the other key water quality parameters are trending towards, the sensor output can be incomprehensible. A dashboard for technical personnel to make informed decisions was created by combining existing algal sensor data, routine, and weather monitoring data. All the components together should provide a clear insight on the state of algal activity at the inlet of the water treatment plant.

This dashboard was designed using the Microsoft Power BI services. Algal related data is displayed as a trending graph (that refreshes every 15 mins) or in tabular form with the latest updated values. The dashboard was set up for two water treatment plants which have an EXO2 integrated into SCADA. This dashboard contains parameters from three main data repositories: 1) SCADA – through the EXO2 algal sensor output, 2) WaterScope – SA Water’s water quality reporting system and long-term repository of routine water quality data and 3) external weather data sourced from the Bureau of Meteorology. The information displayed will help source water managers, operators, and utilities understand the state of algal activity at the inlet of the water treatment plant in near real time.