

Real-Time Detection of ORGANIC SHOCK LOADING

PARAMETERS MEASURED

—
COD
BOD

Wastewater quality can change drastically and quickly – particularly in the case of industrial discharges – that generate shock loads within the wastewater treatment system. In addition to potential operational problems such as increased chemical and aeration demand, shock loads also have the potential to affect regulatory compliance if wastewater cannot be treated properly. Monitoring organics early in the wastewater treatment process empowers you to:

-  **Detect and identify industrial discharge events**
-  **Optimize chemical addition for incoming wastewater COD/BOD, decreasing the potential for under or overdosing**
-  **Improve clarifier performance, increasing sludge quality and reducing handling costs**
-  **Minimize the potential for non-compliance of plant effluent**

Real Tech's BOD/COD monitoring systems provide continuous online measurement of COD and/or BOD, which are the most relevant parameters to assess wastewater quality. Our real-time solutions detect shock loads in wastewater before they reach treatment, giving you the ability to prepare for treatment and avoid non-compliant effluent.

Organic Shock Loading in Wastewater

Industrial discharge can contain high concentrations of organic material and other contaminants. Incoming wastewater quality to a municipal treatment plant can change rapidly in the case of an industrial discharge event, creating an unexpected shock load. These events impact normal plant operations, and are known to cause treatment process problems, increased operational costs and in some cases, deteriorated effluent water quality. To manage shock loading events, WWTP may be operating with a buffer to minimize the impacts on water quality, however this tends to result in high operational costs. A better and more cost-effective solution to shock load management is continuous monitoring of key water quality parameters, biochemical oxygen demand (BOD) and/or chemical oxygen demand (COD), that can provide an early warning of industrial discharge events and feedforward information for effective treatment.

Lab Testing for Organics = Delayed Results & Missed Opportunities

BOD and COD are very useful water quality parameters for wastewater treatment operations. Unfortunately, these labor-intensive laboratory tests take hours to days to generate results, creating a significant delay. When results are received from the lab, the information is usually of little value for event detection purposes or process control. This delay presents a missed opportunity for operators to detect events when they occur, adjust or optimize their treatment system accordingly and evaluate the effect of different operational settings.

Real-time Actionable Information

Real Tech's real-time BOD/COD monitoring systems are advancing how wastewater is managed. The systems provide far superior data both spatially and temporally by continuously analyzing the water onsite as opposed to laboratory testing methods which analyze small volumes that are widely spread over time. This allows the WWTP to quickly identify events that would otherwise go unnoticed, better monitor discharge trends, and provides much greater control capabilities.

Benefits of Monitoring for Event Detection and Treatment Optimization

Continuous BOD/COD monitoring provides the earliest warning of a shock load event entering the plant. This critical information not only helps eliminate the headaches and potential operational problems caused from non detection, but also provides the operations staff with actionable information that can be used to adjust the plant's operational parameters to ensure effluent standards are met.

The addition of chemicals into the primary clarifier or aeration tank can be optimized with real-time organics information. Dosing chemicals based on current water quality conditions ensures enough chemicals are added to achieve treatment goals, while avoiding the addition of excess chemicals, or overdosing. Optimizing the dose helps to reduce the costs associated with these expensive treatment aids, especially during events, while maintaining the desired effluent quality. The same optimization abilities can be achieved in the aeration basins, enabling operators to increase aeration rate when needed during events to boost treatment or decrease the aeration rate for low organic load periods to save energy and costs.

Simple and Affordable BOD/COD Monitoring

Real Tech's UV-VIS sensors use absorbance of light to measure organic compounds that absorb in the UV light spectrum. The sensors provide a multi-dimensional measurement of organic material that enables robust correlations to be established for aggregate organics parameters BOD and COD. In addition, the sensors are capable of detecting changes in the composition of organic load independent of the level of organics, providing more advanced event detection capabilities. Real Tech's innovative technologies combined with automatic cleaning systems keep maintenance and costs at a minimum, making our affordable BOD/COD monitoring systems the ideal choice for municipal wastewater organics monitoring.

Real Tech Inc.

1150 Champlain Court,
Whitby, Ontario L1N 6K9 Canada
TF: 1.877.779.2888 T: 1.905.665.6888
info@realtechwater.com

The logo for Real Tech Inc. features the word "REALTECH" in a bold, white, sans-serif font with a horizontal line through the middle of the letters. Below it, the word "INC." is written in a smaller, white, sans-serif font. The logo is set against a dark blue background that transitions into a photograph of water with ripples and reflections.