

Solids/Turbidity Monitoring in Wastewater Plants



Reliable, real-time turbidity measurement is a cornerstone of effective wastewater treatment. Turbidity reflects the concentration of suspended and colloidal particles in the water and provides critical insight into process performance. The Kemtrak TC007 is specifically engineered to handle the full range of turbidity conditions found in wastewater treatment plants—from clear final effluent to high-solids sludge streams.

Using **backscatter** measurement for high turbidity and **ratio side scatter** for low turbidity, the TC007 delivers stable, drift-free measurements with minimal maintenance. This adaptable mode capability allows operators to monitor multiple points in the treatment process with a single instrument platform.

ASSESSING TREATMENT EFFICIENCY

Throughout primary clarification, secondary treatment, and tertiary polishing, turbidity serves as a key performance indicator. The TC007 can be installed at strategic points—such as clarifier overflows, filter effluent, or final discharge—to provide immediate feedback on process efficiency.

- **Backscatter** mode offers reliable measurement in high-solids applications like sludge thickening or return activated sludge lines, where conventional transmission-based turbidity instruments often fail.
- **Ratio side scatter** provides precise readings in low turbidity conditions such as final effluent or tertiary filtration, enabling tight control of polishing processes.

With real-time data, operators can spot performance degradation early and take corrective action before compliance is at risk.

EARLY DETECTION OF CONTAMINATION AND PROCESS UPSETS

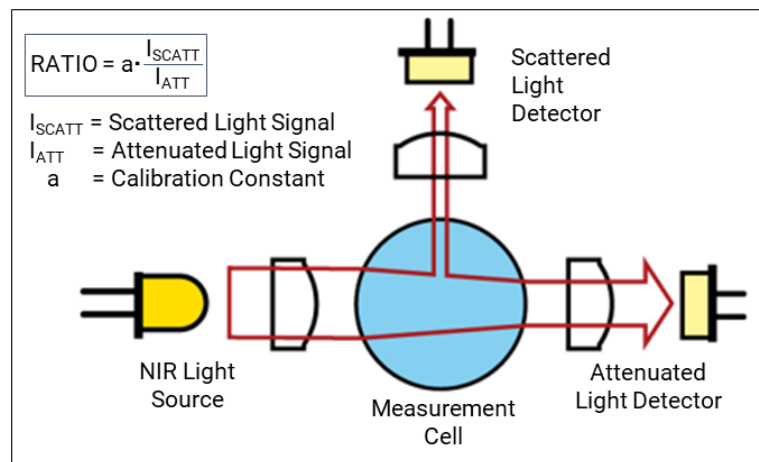
A sudden increase in turbidity is often the first sign of hydraulic overload, equipment malfunction, or process breakthrough. The TC007's optical measurement system responds immediately to these changes. Its **ratio side scatter** measurement is particularly sensitive at low turbidity levels, making it ideal for **final effluent monitoring** where excursions must be caught before discharge.

Alarms or automated control actions can be triggered directly from the analyzer, minimizing downtime and protecting downstream equipment.

OPTIMIZING COAGULATION AND FLOCCULATION

Chemical dosing for coagulation and flocculation is a major cost driver in wastewater treatment. The TC007 provides real-time feedback upstream and downstream of these treatment stages, allowing operators to:

- Adjust chemical dosing to achieve optimal particle aggregation
- Minimize chemical waste and sludge generation
- Maintain stable effluent turbidity during variable loading conditions

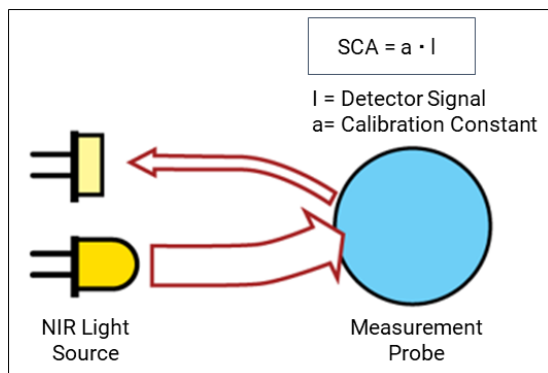


The **ratio side scatter** measurement mode excels in detecting fine particulate breakthrough, giving operators tighter control over flocculation performance.



MONITORING SUSPENDED SOLIDS AND HIGH TURBIDITY STREAMS

In high-solids applications such as thickened sludge, primary influent, or mixed liquor streams, optical transmission sensors often become unreliable. The TC007's **backscatter** measurement mode is designed for precisely these conditions.



Backscatter responds strongly to light reflected from suspended particles, maintaining accuracy even in **opaque and heavily loaded streams**. With appropriate calibration, the TC007 can correlate closely to TSS (Total Suspended Solids), giving operators a reliable, low-maintenance alternative to manual sampling and laboratory analysis.

REAL-TIME MONITORING AND CONTROL

The TC007 integrates easily into plant control systems, providing **continuous turbidity and solids concentration data** to SCADA or PLC platforms. Real-time measurement supports automated process control strategies, including:

- Chemical dosing adjustments
- Flow and process rate optimization
- Alarm and shutdown interlocks for critical excursions

With its **fiber optic connections and robust industrial design**, the TC007 minimizes maintenance requirements while delivering long-term measurement stability.

CONCLUSION

The Kemtrak TC007 brings unmatched flexibility and reliability to turbidity and solids concentration measurement in wastewater treatment plants.

- **Backscatter mode** ensures dependable measurement in high-solids streams.
- **Ratio side scatter** provides precise monitoring in low-turbidity applications.

This dual capability allows operators to monitor and control multiple stages of the treatment process with a single instrument platform. By delivering accurate, real-time data, the TC007 enables plants to optimize performance, reduce operating costs, and ensure compliance with discharge regulations.

TC007 Turbidity/Solids Monitor

- **Adaptable Modes:** backscatter for solids, side scatter for clear water
- **Real-Time:** instant turbidity and solids feedback
- **Wide Range:** from effluent to sludge, accurate everywhere
- **Low Maintenance:** rugged design, minimal upkeep
- **Easy Integration:** works seamlessly with SCADA/PLC



GET IN TOUCH

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