



Management of a dairy waste water treatment plant with online COD analysis in Germany

Industrial Waste Water Monitoring

A spectro::lyser industrial in the effluent of the mechanical cleaning stage provides continuous and reliable data for automation and monitoring of the effluent load.

s::can's solution

To react to the load fluctuations, a continuous COD measurement in the effluent of the mechanical cleaning stage was tested using s::can's spectro::lyser industrial. During the three month test phase, it was found that the highly fluctuating medium with its various ingredients and compositions required additional adjustment. To further improve the measurement, s::can adapted and implemented a global calibration which was tested and delivered excellent results.

The daily fluctuation can be reliably determined, the deviations are minimal. Wiesehoff Dairy Plant is now able to react immediately to load fluctuations in the inlet of the biological cleaning stage. The inlet load to the mechanical and/or biological cleaning stage can now be controlled. In addition, the parameters NO₃, TSS and temperature are now continuously monitored with the spectro::lyser industrial which creates additional benefits.



Background

The Wiesehoff Dairy Plant in Schoppingen Germany processes raw milk daily into a range of high quality products. During the refinement process, approx. 500 m³ (130,000 gallons) of waste water are produced every day which is subject to a constantly fluctuating pollution load. The mechanical and biological treatment of the production waste water takes place in a specially constructed waste water treatment plant outside the production site operated by AWS GmbH.

The polluted waste water is pre-treated before being discharged into the municipal waste water treatment plant. AWS GmbH designed each stage of the cleaning process for optimal performance. Among other things, a mechanical pre-treatment by means of dissolved air flotation and an aerobic treatment plant using the sequence batch process were installed. The size of the plant is comparable to a municipal sewage treatment plant with 33,000 population equivalents (PE).

Challenge

Changing inlet loads and volume-proportional dosing of chemicals at the mechanical cleaning stage led to load fluctuations in the downstream aerobic cleaning stage. These load fluctuations led to a considerable deterioration of the sludge parameters in the biological treatment stage.



AWS GmbH

Parameters monitored:

- COD
- NO₃
- TSS
- Temperature

Facts & Figures

Company/Institution:

AWS GmbH

Location:

Schöppingen, Germany

Application:

Dairy waste water

s::can Partner:

GWU-Umwelttechnik GmbH



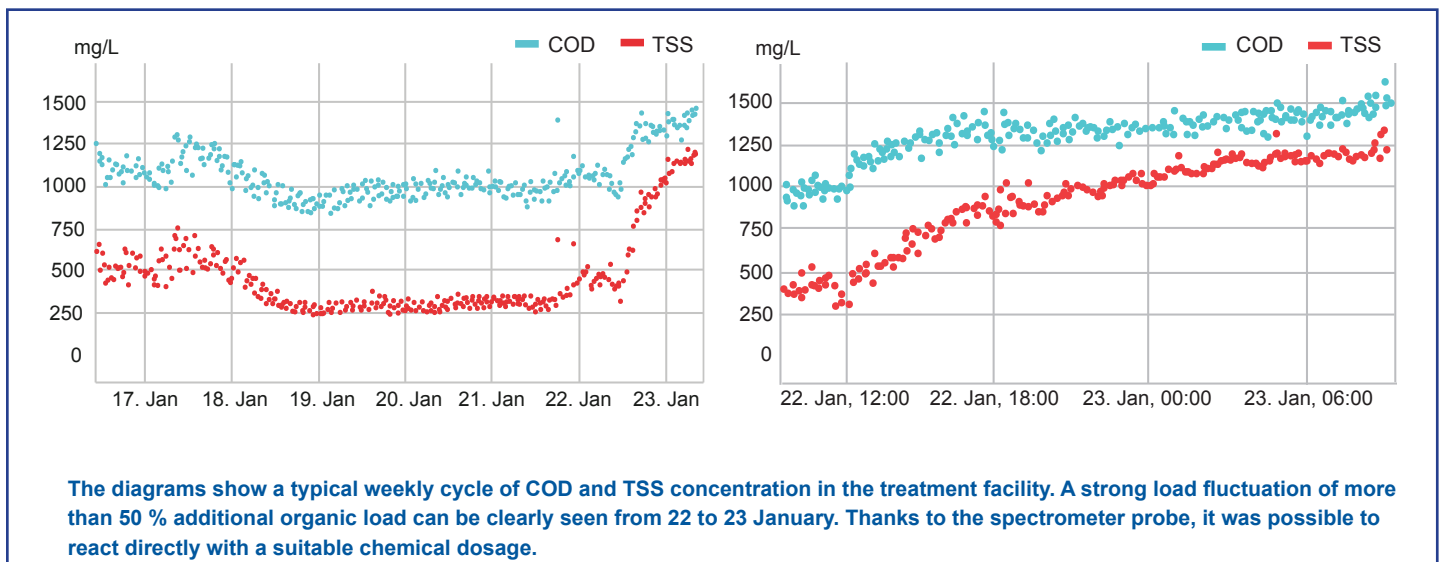
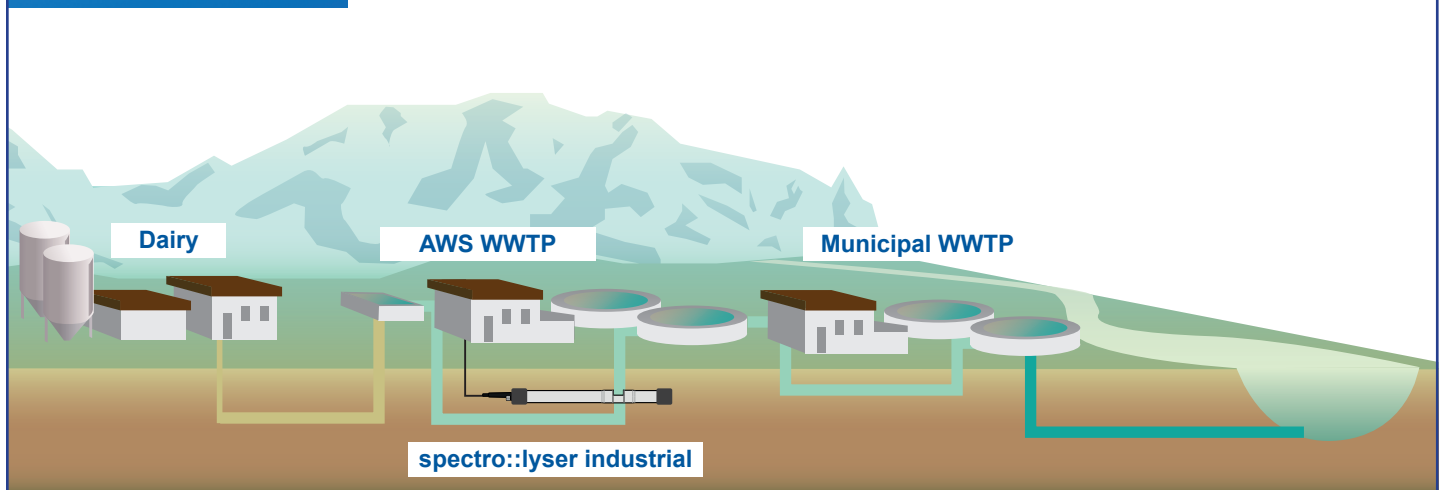
Key Products installed:

spectro::lyser industrial, con::cube and moni::tool

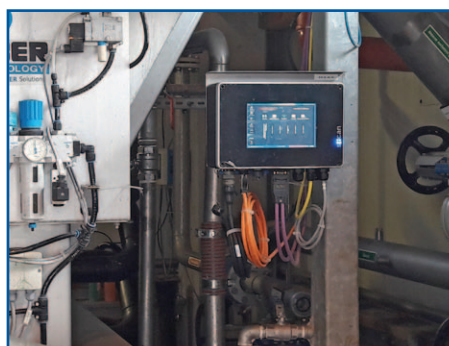
“The probe enabled us to achieve a more stable operation of our plant already during the test phase. After the installation and commissioning, the probe delivers very reliable measured values.”

Jürgen Wolters, Operations Manager

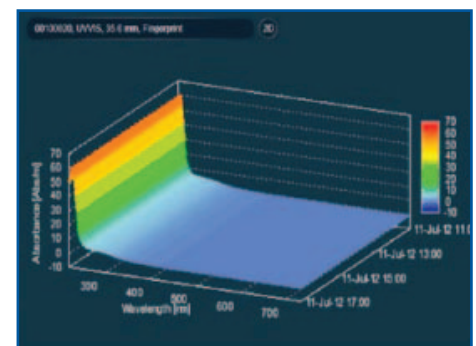
Process Schematic



The s::can spectro::lyser industrial is a fully submersible UV/Vis spectrophotometer that measures light absorbance between 190-750nm. s::can's specialized proprietary algorithms analyze & decompose the spectral data to measure for many waste water parameters: NO₃N, COD, CODs & TSS. There are no moving parts in contact with the water & no reagents are used.



s::can's con::cube is a compact, powerful and versatile terminal for data acquisition and station control. Integrating the newest processor technology, the con::cube has very flexible options for interfacing to SCADA or any central database systems which makes it perfect for station control.



The moni::tool software is a revolutionary platform for the management of measuring stations, online probes and analyzers. Whether it is installed in a large monitoring network or as a standalone station, moni::tool's intuitive software and state of the art features are an essential backbone for sensor and station management.