

Strongly fluctuating influent conditions?

Controlled addition of precipitant with W.T.O.S.

The initial situation

The Luckenwalde treatment plant, opened in 1998, needed to expand its measurement technology. In particular, the strongly fluctuating influent conditions (heavy rain, purged channels etc.) and the associated high nitrogen and phosphorus loads sometimes made it difficult to comply with the discharge consent values.

- ▶ Lack of reliable compliance with the consent values
- ▶ High precipitant consumption
- ▶ Manual metering, or metering proportional to the influent

The plant

- ▶ Capacity: approx. 40,000 PE
- ▶ Built in 1998
- ▶ 2-lane, intermittently aerated circular tanks
- ▶ Chemical P precipitation, simultaneous
- ▶ Aerobic sludge stabilisation



The solution

A PHOSPHAX sc 2-lane measurement device was installed to measure the orthophosphate concentrations in the outlets from both aeration tanks. A W.T.O.S. P module (2-lane, real-time controller) controls the addition of precipitant according to the P load and individually for each tank. This ensures reliable compliance with the P_{tot} limit values, even when the amount of precipitant used is reduced.

- ▶ Installation of a PHOSPHAX sc 2-lane analyser
- ▶ Load-dependent addition of precipitant using the
- ▶ W.T.O.S. P module (2-lane)
KP [in mol Al/mol P] reduced from 13.95 to 9.57

The advantages

- ▶ Reliable compliance with the limit values
- ▶ Load-dependent addition of the precipitant
- ▶ **Precipitant reduced by >25 %**

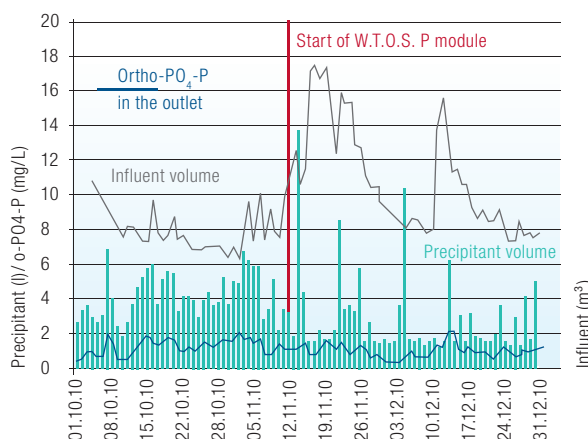


Figure 1: When W.T.O.S. was commissioned, precipitant use was reduced considerably and effluent values remained stable and below the limit value.

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More information on this project can be found at www.hach-lange.co.uk

HACH LANGE GmbH
 Tel.: +49 (0)211 52 88 -0
 Fax: +49 (0)211 52 88 -1 43
 info@hach-lange.de
 www.hach-lange.com

