

# Increasing safety in a wastewater treatment plant

## Automatic dosing of flocculants for Phosphate elimination



### Benefits

- Keeping the official outlet limit of Phosphate at all times
- Optimizing the plant safety of your wastewater treatment plant
- Managing the chemicals cost efficiently
- Reducte the production of sludge

**The implementation of an automatic dosing of the flocculants allows the customer to respect (24h a day, 365 days a year) the limit for phosphate in the outlet and save a lot of money: resulting in less chemicals and sludge production.**

### The results

- Saving of 26.000 €/year of flocculants (PAC)
- 2% reduction of sludge production
- Even with a big peak of phosphate in the inlet, the outlet was under the official limit each time

**Customer challenge** The inlet of this wastewater treatment plant is variable due to industrial high load wastewater. The manual dosing of flocculants was not enough to maintain the concentration of phosphate in the outlet under the official limit of 1 mg/l P total.

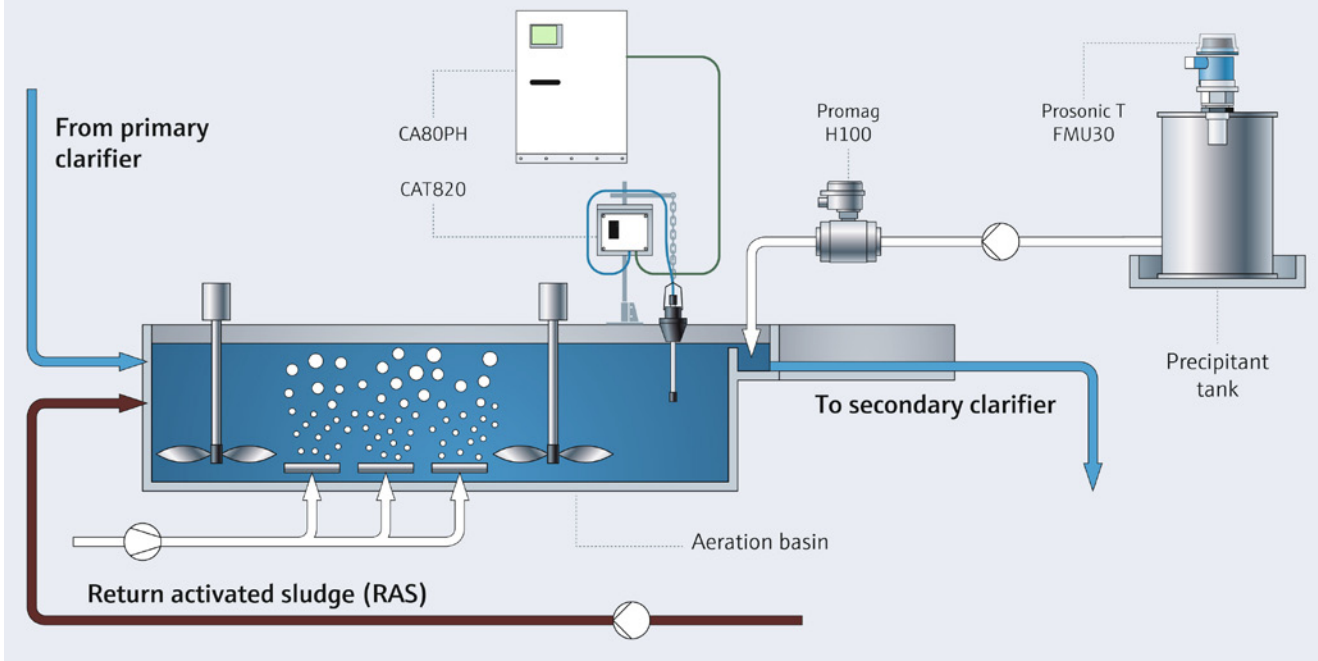
The customer challenge is to respect the official outlet limit of Phosphate and manage the chemicals' costs efficiently.

**Our solution** The best way to reach this goals was to implement an automation system for chemical dosing which is based on phosphate measurement - in the outlet and in the inlet.

The automation system (Liquicontrol-P) of Endress+Hauser was the only system who was able to measure both points:

- By using the inlet Phosphate concentration the algorithm define the "stoichiometric" quantity of flocculants.
- By using the outlet phosphate concentration a predictive regulator increase or decrease the previous quantity of flocculants in order to follow the set-point that the customer can freely define for the outlet (in our case 0,8mg/l).

## PO<sub>4</sub> precipitation




### Solution components:

- Instruments: Phosphate analyzer with 2 channel version (CA71PH, CAT221 for outlet, CAT221 for inlet)
- Hardware: PLC (Rockwell Automation Allen Bradley® CompactLogix™)
- Software: Liquicontrol-P
- Dosing pumps
- Cabinet for outdoor installation of analyzer, electric box and pumps

**i Ortho-phosphate analyzer Stamolys CA71PH**  
Colorimetric system for the monitoring of wastewater applications and process water. From 2015 on, the analyzer CA80PH will be the replacement.

### Benefits

- Automatic calibration and self-cleaning
- Free selectable measuring, cleaning and calibration intervals
- Measured value storage using integrated data logger

 [www.endress.com/ca71ph](http://www.endress.com/ca71ph)

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