

False alarms eliminated on final settlement tanks

RESULTS

- Unnecessary call-outs stopped
- Cost savings made
- Elimination of false alarms



APPLICATION

Final settlement tank sludge level measurement

CUSTOMER

Thames Water treatment works, Crawley, UK

CHALLENGE

The Thames Water treatment works processes waste water and returns the cleaned water back into the local water course. The final settlement tanks (FSTs) based there are linked through a radio network and then to a distributed control system (DCS) that protects against contaminated water leaving the site.

One of the critical measurement areas is that of the sludge blanket level inside each final settlement tank. If the sludge blanket rises to a high level and flows out of the FST, then contaminated water will be added to the water course producing an unacceptable safety risk.

As a result of the critical nature of all FST instrumentation, any high level sludge alarms require a fast response and call out of operators – irrespective of time or cost. Given this fact, spurious false alarms are an unwanted, expensive diversion.

Previously, Thames Water used an ultrasonic gap sensor system for high level alarm of the solids content of the water by measuring the attenuation of transmitted ultrasonic pulses.

The attenuation of the gap sensor signal increased as the solids content between them increased and thus when the signal dropped to a predefined level, an alarm was raised and the operator called to site.

This system worked reliably but only if the sludge blanket being measured was stable. At the Crawley site, there were a number of situations where small sections of the sludge blanket broke away and were suspended in solution at a depth that was detected by the gap sensor system. As soon as this suspended section of sludge blanket passes through the gap sensor - even though it poses no safety problem - an alarm is raised, causing an unnecessary operator call out.

“We no longer have operators called out for spurious false alarms”

Instrument engineer



MSL600 mounted over the settlement tank

WATER & WASTEWATER

SOLUTION

Thames Water installed a Mobrey MSL600 to monitor the sludge blanket. This completely removed the spurious alarms produced by the gap sensor system, saving both time and cost to the customer.

As a result of the installation of the MSL600 system, the sludge blanket on the final settlement tank was fully characterised, and all the spurious operator call outs stopped.

The graph (right) shows a typical trace from the unit installed at the Crawley site, downloaded from the Mobrey logging software 'LogView'. This clearly indicates the daily cyclic nature of the sludge level, as well as the removal of all of the spurious alarms that caused so many problems.

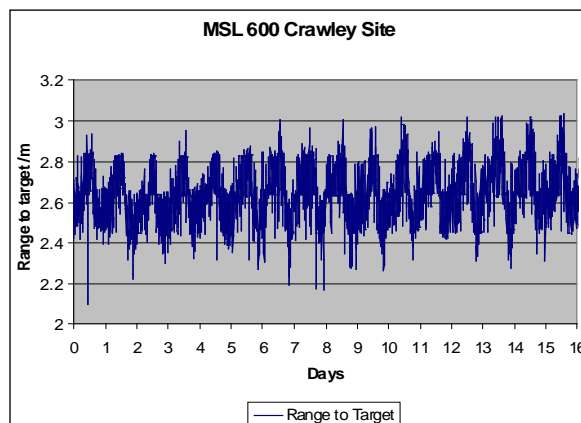


Figure 2 Typical trace from the MSL600 indicating the cyclic nature of the sludge level

**Emerson Process Management
Mobrey Measurement Division**
158 Edinburgh Avenue, Slough,
Berks UK SL1 4UE
Tel: +44 (0)1753 756600
Fax: +44 (0)1753 823589
e-mail: mobrey.sales@
EmersonProcess.com
www.mobrey.com

Emerson Process Management
8200 Market Boulevard
Chanhassen, MN 55317
T (U.S.) 1-800-999-9307
T (International) (952) 906-8888
F (952) 949-7001
www.emersonprocess.com

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