

Accurate dosing pumps enable Welsh water to maintain strict phosphorus limits and reduce maintenance costs

- Continuous dosing of ferric sulphate at water treatment works
- Diaphragm pumps were blocking on a repetitive basis
- Qdos pumps help Welsh Water meet strict phosphorus limits and provide significant maintenance savings

To help overcome the repeated blockage of diaphragm pumps when dosing ferric sulphate at wastewater treatment plants, a number of Welsh Water sites now feature Qdos peristaltic chemical metering pumps from Watson-Marlow Fluid Technology Group.

The investment is expected to achieve a quick return thanks to significant savings in maintenance. Moreover, the Qdos pumps are helping Welsh Water meet increasingly strict phosphorus limits.

The continuous dosing of ferric sulphate at water treatment works requires the application of reliable, high performance pumps. For Welsh Water, the traditional pump type of choice has been based on diaphragm technology. However, this has had its issues.

Blocked diaphragm pumps

“Our diaphragm pumps were blocking on a repetitive basis,” explains Ronnie Swain, Process Technician at Welsh Water. “Almost every time I visited one of our sites there would be problems with the diaphragm pumps. We would start off by turning them up to achieve the same flow, but eventually we’d have little option but to get our maintenance team involved to open up the pumps and remove the blockage. Diaphragm pumps have a lot of components, such as non-return valves and springs, which can clog. We had to carry a whole array of replacement parts in stock. It was clearly time to look for another solution.”





Welsh Water opted to install a Qdos 120 pump for dosing ferric sulphate at one of its wastewater treatment plants. “The difference compared with the diaphragm pump was noticeable from the beginning,” says Mr Swain. “Since installing the Qdos pump, we have not had any more problems with blockages.”

Qdos pumps also cut chemical cost through higher accuracy ($\pm 1\%$) metering. In short, peristaltic pumps enable tighter targets for phosphate levels.

“Phosphorus is already limited to 1 or 1.25 mg/l, but the expectation within industry is that it will soon become even stricter,” says Mr Swain. “Obviously we are dosing ferric sulphate, which means we also have to be careful that we don’t fail on iron levels. This balance means we need pumps that work reliably and correctly on a continuous 24/7 basis.”

An added advantage is that Qdos pumps offer reduced maintenance with single, no-tools component replacement. For Welsh Water, maintenance time with the Qdos pumps is now just a few minutes – whereas clearing a blockage from a diaphragm pump would take more than an hour, and would be required far more frequently.



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