



BioMate* SAN9480 controls microbiological fouling in air scrubbers

background

A food plant situated in Holland is obliged to meet strict air pollution standards. The plant uses several air scrubber units to remove particulate contaminants from airstreams in atmospheric discharge stacks. Because of their organic nature, these particles nourished excessive microbiological growth on the water distribution packing surfaces. This growth not only reduced the scrubbing efficiency of each unit but was also found to be mainly *Pseudomonas* sp. which presented significant health risks to employees and the surrounding community. The result was that each scrubber required extensive and costly cleaning at least five times per year. Even after cleaning, growth was re-established so quickly that the pressure in the water system always rapidly increased soon after start-up and stabilised at a high level, increasing system maintenance demands. Several previous attempts to control this fouling had failed due to either negative impact on scrubber performance or unacceptable chemical discharge levels.

solution

After studying the scrubber design and operation, SUEZ Water Technologies & Solutions recommended using its BioMate* SAN9480 biological control agent. This product was chosen not just because of its excellent biocidal effectiveness at low dosages over a broad spectrum of microbes, but also because it quickly degrades to harmless end products prior to discharge. Biological activity was monitored for a control period using SUEZ's BIOSCAN* instrument to measure the light emitted when enzyme reagents react with ATP, a substance found in all living cells.

The entire system was then closed down and cleaned. On start-up, BioMate SAN9480 was dosed daily at a concentration of 200 ppm via the suction side of the recirculation pump. BIOSCAN measurements were used as the control parameter.

results

BIOSCAN tracking quickly showed that the dosing of BioMate SAN9480 was effective in controlling the microbial content of the wash water compared with earlier control measurements. Nor was there any recorded increase of water system pressure – in the past, a sure sign of microbiological fouling in the distribution packing.

Two months later, at the next scheduled cleaning time, the scrubber was inspected and found to be perfectly clean, with no microbiological fouling. The cleaning frequency was promptly reduced to once per year. Even after a full year of maintenance-free operation, fouling of the distribution packing was described as negligible, and easy to remove.

The use of BioMate SAN9480 prevented microbiological fouling in the air scrubber systems. This enabled a reduction in cleaning frequency from a minimum of five times a year to once per year, thereby reducing scrubber cleaning costs by 80%.

Moreover, yearly cleaning was easier and safer for operators.

The systems now operate more efficiently and cost effectively within air and water discharge restrictions.

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