

It's all about chemistry

Images: (1) A major success - the new Moving Bed Trickling Filter is now running efficiently and there are no odours from the plant off-gas outside the plant limits. (2) Jos van Es who has been involved with the Environmental Project at Rozenburg since its outset in 2002.

“Both operations and maintenance personnel were involved in all phases of the project, ... And now we have the benefit of having MBTF experts in multiple departments of the Lucite Rozenburg team!”

It's been a success for Rozenburg's Environmental Project



After four years of successes and setbacks for Rozenburg's Environmental Project, a new biological off-gas purification unit has been installed at the Lucite® Diakon® plant and early signs look extremely positive. Called a Moving Bed Trickling Filter (MBTF) unit, this new piece of equipment replaces the Bio Trickling Filter (BTU) unit, which we reported about in GF, June 2004.

Critical to the success of this project was the multidisciplinary Lucite International team: Jan Bos, Project Manager, Jos van Es, Georg Maxein and John Buijs, Project Engineers, Johan Tanis, E&I Engineer, Michel Dingemans, Mechanical Engineer, Jan Uitenbroek and Martin Schilperoort, Operations Representatives, Jaap van der Does, Local Project Accountant, Steve Horner and Ian Ruddle UK Project Support.

Environmental permit sets levels

We talked to Project Engineer, Jos van Es, who has been involved from the outset of the project to find out how he and the team have finally achieved success. He explained: “The environmental permit for our site at Rozenburg states that the odour reduction from the plant must be such that there is no smell noticeable outside the plant limits. This means that all the plant off-gas streams being sent to the atmosphere must be purified to remove at least 80% of the volatile organic carbon and 95% of the odour. And it is the reason why the Environmental Project was set up in 2002.

Phase 2 setback

“Originally we thought there would be 2 phases: from 2002–03 we'd collect the individual off-gas streams and combine them into one main line, and then 2003–04 we would focus on the purification of the combined plant off-gas in a new biological treatment unit, namely the BTU. Unfortunately, there were major operational difficulties soon after start-up and because the supplier went bankrupt, taking our guarantees with him, we were forced to find an alternative solution.

Plan B ... move to Phase 3

“So, we were forced to add phase 3! The MBTF unit was identified and eventually selected

because of its technological advantage – it is able to regenerate its filter automatically so that clogging problems no longer occur. We then entered a tight schedule, but were very aware of the need to allow sufficient time for piloting so that the same mistakes were not made again.”

Lucky number 3!

“At this point in time, I am very happy to say that the MBTF Unit is running successfully at optimum process conditions and with no odours from the plant off-gas outside the plant limits.”

Jos credits a huge amount of the success of this project to the fact that phase 3 led to working in a truly multidisciplinary team: “Both operations and maintenance personnel were involved in all phases of the project, which resulted in a better design, a smoother construction phase with fewer unpleasant surprises or late modifications, and a quicker start-up phase. And now we have the benefit of having MBTF experts in multiple departments of the Rozenburg team!”



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