

- Application description of the BioTector installations in Diageo, Dublin, Ireland.

- BIOVECTOR® 970 INSTALLED TO MEASURE THE EFFLUENT LEAVING THE PRODUCTION PLANTS, AND TO IMPROVE THE EFFICIENCY OF THE PLANTS BY ACTING AS A SPILL DETECTION MECHANISM.

Background

The BioTector installed in Diageo is used to measure the level of waste leaving the production plants, and with the aid of flow meter, to quantify the level of the waste produced. Among other products, this plant is used to produce Baileys Cream Liquor and as a result the waste can be high in alcohols and cream by-products.

Unlike the alcohols, which do not present a challenge for the TOC analyser sampling system, cream by-products and fats are extremely difficult to measure reliably.

Previously, TOC analysers based on UV persulfate technology were installed on this application, but these failed to operate reliably. Therefore, it was decided to replace these with the BioTector TOC analyser, which uses the patented self-cleaning 2-stage advanced oxidation principle.

The BioTector TOC analyser system installed in Diageo is a totally self contained system consisting of 4 discrete parts:

BioTector 970 TOC analyser.
BioTector Oxygen generator.
BioTector vacuum sampler.
Hot water wash system.

The integration of these components is show on the next page.

The major challenge was to prevent the sampling system from clogging up. When the waste left the plant, it had a relatively high temperature, which kept the fats in solution. However, as the temperature dropped in the waste pipe network, the dissolved fat had a tendency to form solid globules in the sample waste stream. The challenge was to prevent these globules from blocking the sample system. After extensive testing with numerous cleaning agents, it was found that hot water was the most effective cleaning agent. Therefore, to achieve a low level of maintenance a hot water backwash was installed on the sampling system.

Following on the success of the first installation, a second BioTector TOC analyser has been installed to measure the outfall to the municipal sewage system, and the layout of the second system is identical to the first. A third installation has also been installed in the Diageo plant in Belfast.



- LAYOUT OF THE BioTECTOR® 970 SYSTEM INCLUDING OXYGEN GENERATOR, VACUUM SAMPLER AND HOT WATER WASH SYSTEM.

