



• The BioTector® 970 eliminates emissions from Bio-tower Effluent Treatment Control Systems

- ON-LINE TIME >99% SINCE INSTALLATION IN MARCH 1997, EVEN WITH HIGH FAT CONCENTRATIONS IN THE SAMPLE STREAM
- BIO-TOWER COD LOADING CONTROLLED TO MAXIMISE OPERATIONAL EFFICENCY
- BIO-TOWER EMISSIONS ECONOMICALLY AND EFFECTIVELY ELIMINATED

General Background

The effluent produced by the dairy factory is high in milk fats, sugar and protein. These by-products from the manufacture of various dairy products need to be neutralised before they can be released from the plant. To facilitate the biological oxidation of its waste products, Glanbia uses an aerobic bio-tower. However, if the carbon load of the waste coming directly from the processing factory is too high, the biological environment within the bio-tower is unfavourably altered and putrefaction (i.e., greater anaerobic digestion) occurs. This lowering of oxidation activity within the tower also results in a reduced processing capacity of the effluent plant, and the release of offensive odours.

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Application Description

The BioTector® 970 was installed in Glanbia's effluent treatment plant as a carbon load warning system. To monitor the carbon load of the effluent entering the bio-tower, the BioTector® is programmed to analyse a representative sample containing all the fats, sugars and proteins from the factory's main effluent plant every 30 minutes. This data is then sent to the control room via a 4-20 ma signal, and the carbon load is calculated by integrating the TOC result measured by the BioTector® with the flow signal received from the flow meter installed in the waste line. Once the incoming carbon load exceeds the capacity of the bio-tower, the plant control system takes the necessary action to prevent the bio-tower from being destabilised.

The BioTector® has succeeded in totally eliminating the release of offensive odours from the bio-tower. It has proved highly reliable and experiences no problems in analysing milk fats and solids.



The sample tube in the Bio-tower application.

Although the sample tube is coated in fats, the BioTector® has continued to operate continuously since 1997, always analysing a fully representative, unfiltered sample.



Installation Diagram, showing the location of the BioTector[®] in the Glanbia effluent treatment system.

