cbio
cleveland biotech
the natural solution

baccelerator®

Mobile biological activation unit that continuously doses specifically tailored and acclimatised, actively growing bacteria, into biologically compromised treatment works to boost their performance.

baccelerator®

Installation/application requirements

Installed by:	CBIO engineers
Power requirements:	415v or 240v
Mains water requirements:	None
Injection point:	A feed is usually taken from the clarified influent liquor and the acclimatised bacteria are injected back into the plant upstream of the biological treatment zone.

Product availability

Dosing unit

Baccelerator:	1700 x 1000 x 1000mm

Bio-product description

Liquid

Biological activity:	Min 1 x 10^7 cfu/ml
Appearance:	Blue viscous liquid
Hazard group:	Hazard group 1

Powder

Biological activity:	Min 5 x 10^8 cfu/g
Appearance:	Light brown powder
Hazard group:	Hazard group 1

Health & Safety statement

Material Safety Data Sheets are available on request

CAPITAL COST SAVING SOLUTION FROM CBIO

A large residential College in the north of England, housing 550 live-in students and 450 non-resident staff, operates its own on-site effluent treatment plant to treat all foul waste before discharge to local sewer. The effluent plant constructed in 1991 comprises an inlet settlement tank at the head of the works from where the clarified influent feeds by gravity the coke filtration biological treatment zone via a 4-arm rotating sprinkler unit. From here the biologically treated effluent flows via humus tanks to the final effluent chamber, from which samples are taken for Discharge Consent compliance testing.

A review of historical performance data reveals that, of 35 samples analysed during the period Nov 1999 to Dec 2005, the treatment plant failed to meet Consent on 8 occasions. Of those non-compliances, 6 were attributable to elevated ammonia, 1 to BOD and 1 to s/s.

At the time CBIO was appraised of the situation, discussions had already taken place with a Contractor for the design and installation of a replacement treatment works with a higher biological capacity. However the anticipated costs of the build were considerable and, taking into account the fact that from a mechanical point of view the existing plant was sound, alternative lower cost solutions to the problem were sought.

At this point CBIO was invited to propose an alternative, more cost-effective solution. CBIO is a leading company in the field of targeted environmental biomass engineering and specialises in bespoke design of biological solutions for pollution control. In biomass engineering, specifically selected micro-organisms are added to biological systems in order to restore or enhance existing biological activity. Since CBIO breeds and acclimates a variety of different micro-organisms, a diverse range of products has been formulated to target many different pollutants present in effluent plant waste streams.

To compliment these biological products, CBIO has developed a continuous on-site bacterial growth system to allow the pre-growth and automatic addition of large quantities of actively growing, specifically-tailored bacteria to the treatment plant - the Baccelerator.

The Baccelerator was developed in conjunction with a leading UK Water Authority and its efficacy proven at a number of ailing treatment works experiencing similar problems to those at the College. In one specific case (a municipal STW) the ammonia levels were reduced dramatically (from 60 ppm to < 1 ppm) within 10 days or so, following the installation of the unit. This improvement can be explained as follows. The presence of certain organic impurities in a waste stream can impede the growth of the sensitive organisms responsible for ammonia removal. By boosting the organic degrading bacterial population by use of the Baccelerator, a greater fraction of the organic impurities are removed, leading to lower BOD levels, but more importantly this can lead to improved ammonia removal efficiencies since the bacteria responsible for the latter processes proliferate more readily.

Based upon these successful treatment solutions, a Baccelerator unit was ordered and installed at the College and the performance of the treatment plant was closely monitored.

The College Estates Manager reports: “As soon as the unit was installed, we saw an immediate improvement in the biological performance of the effluent treatment plant. The unit has now run reliably for 6 months and is giving excellent results. During this period we have not experienced a single Discharge Consent failure and have considered installing a second unit. The Baccelerator has provided us with a robust, cost effective alternative to building a new effluent treatment plant and has saved us hundreds of thousands of pounds in capital expenditure. Over the coming months we shall be working closely with CBIO to ensure that our existing treatment plant will be able to cope with further increases in loading as we expand student intake at the College”.

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