

Case Study



ENSO INTERNATIONAL LTD SELECT BIOMARBLE FROM WARDEN BIOMEDIA RANGE FOR LANDFILL LEACHATE TREATMENT PLANT AT NANTYCAWS

The existing landfill leachate treatment plant at Nantycaws was failing to meet the consent levels, and Carmarthenshire County Council was tankering on a daily basis. The Council was therefore looking for a robust treatment solution that would meet the EA consent requirements and reduce the frequency of tankering.

Working in collaboration with WEBS, EnSo International Ltd was called in to offer a temporary treatment solution, in the form of an Ocean Professional Nitrification Plant, to test the design concept. The temporary plant was designed to take a proportion of the flow to enable EnSo / WEBS to establish the treatability of the effluent and to fine-tune the process design for a full treatment system. The 18 month trial proved successful and the roll out of a permanent system took place in October 2012.

Following the trial, EnSo extended the temporary treatment plant to include a 40m³ pre-aeration and settlement tank followed by four 40m³ Moving Bed Bio-Reactor (MBBR) tanks. A drum filter was also installed as tertiary treatment to remove any residual solids.

The system has proved successful on two counts: firstly costs have reduced by 95% as tankering is now significantly reduced; secondly the effluent quality is well within the consent limit.

The random filter media range selected for the pre-aeration tanks and Moving Bed Bio-Reactor (MBBR) tanks in the Landfill Leachate treatment plant at Nantycaws is Biomarble from the Warden Biomedica range.

With the philosophy of increased surface area, the eco-friendly trickling filter and biological filter media are injection-moulded in recycled polypropylene with specific design features to increase the efficiency of the effluent treatment process.

In a choice of spherical and tube formats, to suit the application, the random filter media provide excellent ventilation to speed-up the aerobic reaction, and also have high voidage to prevent blocking (and the resulting slowing-down) of the wastewater treatment process that might occur.

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Dirk Daude, Commercial Manager at EnSo International Ltd said, **‘We are very pleased with the results achieved by Warden’s Biomedica. Biomarble from their Biomedica range has been a great asset in the design process of our Landfill Leachate Treatment plant and has met expectations for efficiency and performance’**.

Results Achieved

	Consent limit	Result Achieved
BOD (Biochemical Oxygen Demand)	20 mg/l	1 mg/l
Suspended Solids	30 mg/l	8 mg/l
Ammonia	4 mg/l	0.074 mg/l
Ferris	0.75 mg/l	0.496 mg/l



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