



**Press Release**

**09 January 2012**

**Bluewater Bio International**  
(“Bluewater Bio” or the “Company”)

**Severn Trent Water deploys Bluewater Bio’s HYBACS technology to upgrade its Ashbourne sewage treatment works in Derbyshire.**

Bluewater Bio International, the provider of HYBACS<sup>®</sup>, a high-performance and highly cost-effective wastewater treatment technology, is pleased to announce that Severn Trent Water (“Severn Trent”), through its key framework contractor MWH Treatment (“MWH”), has placed an order for Bluewater Bio’s HYBACS<sup>®</sup> wastewater treatment technology to upgrade the Ashbourne sewage treatment works (“STW”) in Derbyshire, which serves a population equivalent of approximately 35,000.

The order follows three years of close collaboration between Bluewater Bio and Severn Trent, during which time HYBACS<sup>®</sup> was evaluated in a containerised demonstration plant at Coleshill STW in Birmingham. Mark Jones, Waste Water R&D Manager for Severn Trent, explained: “Rarely do we come across such novel technologies as HYBACS<sup>®</sup> and following an extensive and lengthy on-site evaluation we were convinced that this could provide real cost effective solutions to the challenges we face. We believe that HYBACS<sup>®</sup> has great potential, especially as a ‘slot in’ process for the upgrading of existing sites due to its low operational cost and small additional hydraulic head requirements.”

Adrian Harris, Chief Operating Officer of Bluewater Bio, said: “We worked very closely with Mark’s R&D team during this evaluation period in which the HYBACS<sup>®</sup> plant demonstrated a very high performance and, in particular, the high level of nitrogen removal required both to meet and exceed the most stringent European treatment standards. We would like to thank Severn Trent for their commitment and support during this time.”

The demonstration of an enhanced level of nitrogen removal was especially important because the requirements under Europe's Urban Waste Water Treatment Directive exceed those of the Total Nitrogen metric in South East Asia, where earlier versions of the technology originated.

The overall plant upgrade is being carried out by MWH to whom Bluewater Bio will supply four of its proprietary SMART™ unit reactors, which power the HYBACS® process. The upgrade is being undertaken as a result of an imminent increase in load to the works, of approximately 45 per cent, due to expansion by a major trader within the Ashbourne catchment. The selection of the HYBACS® process at Ashbourne followed an extensive review of alternative treatment options. These were assessed with a view to delivering the most efficient and cost beneficial solution with consideration given to a range of key factors, including: initial capital investment, ongoing operational costs, embodied and operational carbon, maximisation of the existing assets, constructability and delivery timescale, planning risk, and power requirement. The project team recognised that the HYBACS® solution delivered distinct advantages within these selection criteria over the other process options. The works are programmed to be completed in May 2012.

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**About Bluewater Bio**

Bluewater Bio is a global specialist in the treatment of wastewater. Bluewater Bio's flagship product is its patented HYBACS® technology, a high-performance, cost effective advanced biological solution for the treatment of wastewater.

Bluewater Bio also has a growing technology portfolio through the acquisitions of FilterClear Ltd's portfolio of high performance multimedia filters and of Water Innovate Ltd, the spin-out from Cranfield University's School of Water Sciences. Bluewater Bio's suite of technologies benefit from both in-house R&D and product development, and from collaboration with key technical partners including Cranfield, as a result of the Water Innovate acquisition, and also Nankai University in China.

HYBACS<sup>®</sup> is rapidly gaining commercial traction among a growing number of companies in Europe, South Africa and in the Middle East, on the basis of its commercial superiority to comparable existing high performance treatment processes worldwide, across a wide range of treatment requirements. HYBACS<sup>®</sup> is an innovative nutrient removal wastewater treatment technology that was developed from a process originating in South Korea. It is applicable to new as well as existing works, over a wide range of scales, and has been proven commercially in over 25 applications, with Bluewater Bio's latest contract win being for the 100,000m<sup>3</sup>/day upgrade of the largest wastewater treatment works in Bahrain, at Tubli Bay.

HYBACS<sup>®</sup> is not only highly applicable to the municipal treatment sector but also to a wide range of high strength organic industrial wastewaters from food or beverage production, leachate and livestock waste treatment. Bluewater Bio aims to present customers with solutions which provide benefits in capital and lifetime cost, treatment performance, ease and speed of plant deployment, and well suited to combine with tertiary filtration for high quality water reuse applications.

HYBACS<sup>®</sup> is a 'HYBrid Activated Sludge' technology which deploys Bluewater Bio's proprietary SMART<sup>™</sup> Units ahead of an activated sludge process which recycles back to the SMART<sup>™</sup> Units. SMART<sup>™</sup> Units are low footprint, low energy, very high-performance rotating reactors featuring high-void mesh plates which fill with active biomass. HYBACS<sup>®</sup>, whilst also applicable to greenfield installations, is often an ideal solution for the upgrade and expansion of existing wastewater treatment plants where some combination of increased effluent quality requirements and/or additional capacity is needed. The SMART<sup>™</sup> Units represent the first stage of a two biological stage process, followed by clarification. The SMART (Shaft Mounted Advanced Reactor Technology) Units feature attached biomass which offers typically 90 (ninety) times greater treatment performance per unit volume than a conventional aeration tank. The second stage is an activated sludge process, with suspended biomass. It has been demonstrated that the HYBACS<sup>®</sup>

system can produce effluents with qualities compliant with the most stringent European nutrient removal standards.