



Press Release

11 December 2013

Bluewater Bio

(“BwB” or the “Company”)

Inauguration Ceremony for BwB’s HYBACS Upgrade at Tubli WPC, Bahrain

Minister of Works & UK Ambassador attend unveiling of landmark environmental project

On Monday 09th December, Bluewater Bio, an award winning provider of high-performance, cost-effective water and wastewater treatment technologies, officially launched its HYBACS[®] wastewater treatment upgrade at the Tubli Water Pollution Control Centre (“WPC”) in the Kingdom of Bahrain. The launch ceremony was held under the patronage of H.E. Essam Bin Abdulla Khalaf, who was joined by many other esteemed guests, including Mr Iain Lindsay OBE, Her Majesty’s Ambassador to the Kingdom of Bahrain.

Serving a **Population Equivalent** of 800,000, this plant inauguration marks the official completion of the largest environmental regeneration project of its kind in the GCC, and just the first phase of the Bahrain Government’s long term master plan for the Tubli WPC.

In his speech during the ceremony, Daniel Ishag, founder and CEO of Bluewater Bio, said: “Bluewater Bio is delighted to have been selected by the Bahraini government for the 8 million Dinar Tubli wastewater treatment plant upgrade. This is a prestigious project, on a global scale, which will make a major contribution to the regional environment and ecology. We are proud to help future proof the country’s social and economic growth.”

The US \$20 million HYBACS upgrade, implemented by BwB to help alleviate overloading at the original Tubli works, is demonstrating exceptional operational performance; producing test results that consistently meet the highest local and international treatment standards.

Eng. Khalifa Al Mansoor, Assistant Undersecretary at the Bahrain Ministry of Works added: “We meet today to celebrate the opening of the Tubli Wastewater Treatment Plant upgrade project using HYBACS. Today’s event, in the presence of His Excellency the Minister of Works, Engineer Essam bin Abdulla Khalaf, coincides with the Kingdom of Bahrain’s National Day Celebrations. The upgrade project treats 100,000m³/day of the sewage water flowing to the

plant, which now totals 350,000m³/day. Preliminary results indicate that the new system is operating efficiently; in line with the standard specifications and measures adopted in the project.”

The project was implemented in two stages to meet the Client’s continuous treatment requirements. The first stage, completed in June 2013, saw the Company’s SMART™ units, which power the HYBACS process, treat 50,000m³/day of wastewater. Following completion of stage 2, the HYBACS plant is now treating 100,000 of the approximately 350,000m³/day incoming flow to Tubli Treatment Plant.

Combined, these two stages involved converting two of Tubli’s ten existing aeration lanes and four of its twelve clarifiers to the HYBACS process, with 42 SMART units positioned upstream of the existing two aeration lanes. The 100,000m³/d excess flow was diverted from the existing preliminary treatment works to the HYBACS plant, increasing the loading by an additional 150% compared with the original design loading.

Daniel Ishag concluded: “At 42 SMART units, the HYBACS upgrade at Tubli Bay represents a watershed moment for Bluewater Bio, and one which steps us up a gear on the global stage. To gain recognition from the Minister and his team on a project as large and critical for Bahrain adds credence not only to our HYBACS technology but also to Bluewater Bio as a whole.

“I am personally thrilled with the effluent quality results at Tubli to date, and the strong feedback we have received from the Ministry of Works. I would like to thank everyone involved in the Tubli project: not only Bluewater Bio’s own contracting team; but also the Ministry itself, including Engineers Asma Murad, Ebrahim Al-Hawaj and Ban Najim Eldin, our delivery partners P2M, Atlas and Aqua Treat and the UKTI’s Global Entrepreneur Programme (“GEP”). We look forward to growing collaborations of this nature, both in Bahrain and the wider GCC.”

– ENDS –

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Ref. 7722: His Excellency Engineer Essam Bin Abdallah Khalaf, Minister of Works (centre), officially opens the HYBACS upgrade at Tubli Wastewater Treatment Works, Bahrain, accompanied by Iain Lindsay OBE, British Ambassador to the Kingdom of Bahrain (left), and Daniel Ishag, CEO of Bluewater Bio (right).

Ref. 7823 (from L-R): His Excellency Engineer Essam Bin Abdallah Khalaf, Minister of Works, accompanied by Daniel Ishag, CEO of Bluewater Bio, and Iain Lindsay OBE, British Ambassador to the Kingdom of Bahrain, take a tour of the newly-commissioned HYBACS upgrade at Tubli Wastewater Treatment Works, Bahrain.

About Bluewater Bio

Bluewater Bio is an award winning specialist in the cost effective treatment of water and wastewater. It was founded in 2007 to develop HYBACS[®], a patented 'HYBRID ACTivated Sludge' process. Following organic and acquisitive growth, our capabilities now include:

- HYBACS[®] (cost-effective activated sludge upgrade)
- FilterClear[™] (high throughput multi-media filtration)
- GHG-Tox (nitrification & greenhouse gas monitoring)
- NeoTech[™] (low energy, high reflectivity UV disinfection)
- World class R&D team, based at Cranfield University, UK

The company has a particular emphasis on reducing:

- CAPEX & OPEX
- Energy & chemical consumption
- Physical & environmental footprint
- GreenHouse Gas emissions – operational and embedded

Combining R&D expertise with a highly entrepreneurial business approach, BwB not only develops its own innovations but also scours adjacent markets for complementary IP, licence opportunities and partnerships. Through this aggregation strategy, BwB aims to be the natural choice for cost effective treatment, re-use and monitoring provision across the water, wastewater and process industries.

HYBACS[®] is rapidly gaining commercial traction among a growing number of companies in Europe, North America, South Africa, Asia and the Middle East, on the basis of its commercial superiority to comparable high performance treatment processes worldwide, across a wide range of treatment requirements. HYBACS[®] is an innovative nutrient removal wastewater treatment process 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 recent contracts including: the 100,000m³/day upgrade of the largest wastewater treatment works in Bahrain; and Severn Trent Water's Ashbourne sewage treatment works in the UK, serving a population equivalent of 35,000.

HYBACS[®] 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, to leachate and livestock waste treatment. BwB aims to present customers with solutions which provide benefits in capital and lifetime cost, treatment performance, ease and speed of plant deployment, whilst being easily combined with tertiary filtration for high quality water reuse applications.

FilterClear[™] is a pressure multimedia filter technology capable of separating suspended solids from a wide range of waters with a comparatively high performance, even at high loading velocities. FilterClear[™]

plants are currently installed at over 40 sites, treating waters such as secondary effluent at wastewater treatment plants, cooling waters at industrial sites and seawater at desalination plants. Throughput ranges from 10m³/hour up to 5,000 m³/hour.

FilterClear technology competes cost effectively with other multimedia filters, continuous filters, deep bed filters, disc filters and micro screens. It has a strong track record in conventional filtration applications and can replace ultrafiltration membranes upstream of RO membranes.

Current clients include Scottish Water, Northumbrian Water, Diageo, Saudi Aramco, Michelin, Museum of London and several resellers.