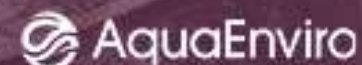


# EUROPEAN WASTE WATER MANAGEMENT VIRTUAL CONFERENCE & EXHIBITION

13<sup>th</sup> - 14<sup>th</sup> October 2020



## Sponsors



## TUESDAY 13<sup>th</sup> OCTOBER

### Conference Opening and Welcome

Rowland Minall, General Manager, Aqua Enviro

### AMP 6 PHOSPHORUS REMOVAL EXPERIENCES

Chair – Matthew Smyth, Technical Director, Aqua Enviro

### FUTURE CONSENT CHALLENGES

Chair – Pete Vale, Technical Lead – Innovation, Severn Trent Water

#### So where have we landed with Lower P Permits?

Sunner, N., Stantec, UK

#### Can micropollutant and nutrient removal from municipal wastewater effluent be combined?

Boelee, N.<sup>1</sup>, van den Eijnde, T.<sup>1</sup>, Broeders, E.<sup>1</sup>, Bates, P.<sup>2</sup>, <sup>1</sup>Nijhuis Water Technologies, The Netherlands, <sup>2</sup>Nijhuis, UK

#### Optimising chemical dosing to meet P consents in Yorkshire Water

Pilgrim, E.<sup>1</sup> and Smyth, M.<sup>2</sup>, <sup>1</sup>Yorkshire Water, <sup>2</sup>Aqua Enviro, UK

#### Beyond ultra-low effluent phosphorus concentration: the benefits of using rare earth elements in wastewater treatment

Haneline, M.R., and Wherry, L.S., Neo Chemicals and Oxides, USA

#### Initial operating experiences in achieving a 0.2 mg/l P standard at Goscote WwTW

Cooper-Smith, G.<sup>1</sup> and Hughes, P.<sup>2</sup>, <sup>1</sup>Eliquo Hydrok, <sup>2</sup>Mott MacDonald Bentley, UK

#### P-Removal without chemicals – containerised electrocoagulation as an innovative greener alternative

Nkrumah, K. and Nabeerasool, A., Kolina Ltd, UK

<p><b>Meeting stringent phosphorus standards – FilterClear design and commissioning experiences in United Utilities</b> Huo, C.<sup>1</sup>, Rostron, W.<sup>2</sup>, Narroway, Y.<sup>3</sup>, Ridge, D.<sup>3</sup> and Hodge, L.<sup>2</sup>, <sup>1</sup>Bluewater Bio, UK, <sup>2</sup>MMB, UK, <sup>3</sup>United Utilities, UK</p>	<p><b>The role of wastewater treatment works in the future of antimicrobial resistance</b> Osborn, B., Byrne, R., Sandford, G., Thomas, D., Waddington, C., Dobson, S. and Gordon, C., Mott MacDonald, UK</p>
<p><b>ROUND TABLE DISCUSSIONS &amp; NETWORKING</b></p>	
<p><b>BIOLOGICAL NUTRIENT REMOVAL</b> Chair – Rowland Minall, General Manager, Aqua Enviro</p>	<p><b>SIDESTREAM LIQUORS – NITROGEN &amp; PHOSPHORUS REMOVAL</b> Chair – Matthew Smyth, General Manager, Aqua Enviro</p>
<p><b>Easy P-sy? Phosphorus 0.2-0.4 mg-Ptot/L in AMP6</b> Wickens, D., Luck, R. and Richard, A., Severn Trent Water, UK</p>	<p><b>Liquor Treatment – 25 years of AMTREAT®</b> Bungay, S., Helix ECL, UK</p>
<p><b>Enhanced nutrient removal using HYBACS</b> Biddle, J., Bluewater Bio, UK</p>	<p><b>Membrane Aerated Biofilm Reactor for side-stream treatment: let the anammox run wild</b> Coutts, D., Guglielmi, G., Houweling, D., Ireland, J., Reeve, M. and Peeters, J., Suez Water Technology and Solutions, Italy</p>
<p><b>Cycle Activated Sludge Technology (C-TECH™) – What discharge values of total phosphorus can be achieved in a bioreactor without post-treatment? – A Case Study</b> Jabornig, S.<sup>1</sup>, Doblinger, C.<sup>1</sup>, Wutscher, K.<sup>1</sup> and Hazard, B.<sup>2</sup>, <sup>1</sup>SFC Umwelttechnik GmbH, Austria, <sup>2</sup>Trant Engineering Ltd, UK</p>	<p><b>Start-up and experiences with side-stream nitrogen removal at Amsterdam Airport Schiphol WWTP</b> de Graaff, M.S.<sup>1</sup>, Robinson, C.<sup>1</sup>, Gerhardt-Meillink, P.<sup>1</sup> and Meulenkamp, R.<sup>2</sup>, <sup>1</sup>Evides Industriewater, The Netherlands, <sup>2</sup>Sweco, UK</p>
<p><b>The HIAS Process: Next generation biological nutrient removal</b> Saltnes, T. and Øfsti, A.T., Hias How20 AS, Norway</p>	<p><b>IFAS ANITA™ Mox Deammonification process for treating THP reject water: First full scale plants in operation and lessons learnt</b> Bigot, B.<sup>1</sup>, Lemaire, R.<sup>2</sup>, Graveleau, L.<sup>2</sup>, Veuillet, F.<sup>2</sup>, Christenson, M.<sup>3</sup>, Nussbaum, B.<sup>3</sup>, Zhao, H.<sup>4</sup>, <sup>1</sup>Veolia Water Technologies, UK, <sup>2</sup>Veolia, France, <sup>3</sup>AnoxKaldnes, Veolia, Sweden, <sup>4</sup>Kruger Inc., USA</p>
<p><b>Membrane Aerated Biofilm Reactor as a flexible, resilient and reliable solution for the upgrade of existing WWTPs: data from full-scale installations</b> Guglielmi, G., Houweling, D., Coutts, D., Ireland, J., Reeve, M., Peeters, J., Suez Water Technology and Solutions, Italy</p>	<p><b>Battling climate change using struvite as phosphorus crop nutrition</b> van Spingelen, R. and Leatherwood, R., Ostara, USA</p>

## ROUND TABLE DISCUSSIONS AND NETWORKING

**ALTERNATIVE AND EMERGING TECHNOLOGIES**  
Chair – Rowland Minall, General Manager, Aqua Enviro

**MEMBRANES**  
Chair – Steve Bungay, Helix ECL

**Evaluating a pilot-scale Revolving Algal Biofilm (RAB) treatment system for sustainable recovery of N and P and reduction in carbon intensity at the Sioux City, IA WWTP**  
Dancer, J., Gross-Wen Technologies, USA

**BNR-MBR – Design and commissioning experience**  
Clark, A., Costain, UK

**Pilot trial of Microvi MNE at Scottish Water**  
Fox, R.<sup>1</sup> and Nair, A.<sup>2</sup>, <sup>1</sup>Scottish Water, <sup>2</sup>Microvi UK Ltd, UK

**Membrane bioreactors – operating and optimisation**  
Smyth, M., Aqua Enviro, UK

**KEYNOTE**  
Chair – Rowland Minall, General Manager, Aqua Enviro

**Resource recovery: some potentials and their caveats**  
Willy Verstraete, Ghent University, Belgium

## VIRTUAL TOUR

Join us for a virtual tour of Royal HaskoningDHV's new Nereda Package and Mini Plants.

## ROUND TABLE DISCUSSIONS AND NETWORKING

WEDNESDAY 14<sup>TH</sup> OCTOBER

<p><b>TERTIARY NITROGEN REMOVAL BIOFILM SYSTEMS</b> Chair – Matthew Smyth, Technical Director, Aqua Enviro</p>	<p><b>CARBON MANAGEMENT &amp; SUSTAINABILITY</b> Chair – Pete Vale, Technical Lead – Innovation, Severn Trent Water</p>
<p><b>Ammonia nitrogen (NH<sub>3</sub> + NH<sub>4</sub><sup>+</sup>) removal using aeration of Submerged Aerated Filters (SAF)</b> Baird, A.<sup>1</sup> and Lawrence, A.<sup>2</sup>, <sup>1</sup>WPL Ltd, <sup>2</sup>University of Portsmouth, UK</p>	<p><b>Delivering sustainable solutions through the AMP7 wastewater programme</b> Knightbridge, J. and Nineham, N., Mott MacDonald, UK</p>
<p><b>Tertiary N and P removal with optimised continuous sand filters, an overview of long-term full-scale plant results</b> Al-Massri, F. and Wouters, H., BW Products, The Netherlands</p>	<p><b>UK water sector: from carbon management to net zero – how could we get there?</b> Manidaki, M. and Depala, P., Mott MacDonald, UK</p>
<p><b>Evaluating a demonstration-scale Revolving Algal Biofilm (RAB) treatment system for N and P recovery for small cities</b> Gross, M., Gross-Wen Technologies, USA</p>	<p><b>Water industry contribution to carbon capture and storage</b> Hodkin, D., WRc, UK</p>
<p><b>ROUND TABLE DISCUSSIONS &amp; NETWORKING</b></p>	
<p><b>CHEMICAL INVESTIGATIONS PROGRAMME</b> Chair – TBC</p>	<p><b>GRANULAR ACTIVATED SLUDGE</b> Chair – Rowland Minall, General Manager, Aqua Enviro</p>
<p><b>Towards a more sustainable WINEP strategy</b> Jeavons, J.<sup>1</sup>, Jolly, M.<sup>2</sup> and Smith, C.<sup>1</sup>, <sup>1</sup>Stantec, <sup>2</sup>Yorkshire Water, UK</p>	<p><b>Design development and start-up of an aerobic granular sludge SBR (Nereda™) under cold and weak wastewater conditions</b> Johnson, B.<sup>1</sup>, Tsotsos, M.<sup>2</sup>, Black, J.<sup>3</sup>, Fox, E.<sup>4</sup>, Mansell, L.<sup>3</sup> and Oliver, B.<sup>4</sup>, <sup>1</sup>Jacobs, USA, <sup>2</sup>Jacobs, UK, <sup>3</sup>United Utilities, UK, <sup>4</sup>Royal HaskoningDHV, UK</p>
<p><b>Supporting the water industry to meet WINEP obligations via the UKWIR Chemical Investigations Programme</b> Brammer, J. and Thornton, A., Atkins, UK</p>	<p><b>Nereda® package plants: a scaleable solution to meet P consents within PE of 500-2000</b> Kerstens, S., Navalho Pires Coelho, F., Oliver, B. and Cady, S., Royal HaskoningDHV</p>
<p><b>The National Investigations Programme – 2020- 2021 – Mechanisms for Removal</b> Davies, S., Dai, Z. and Herron, D., Aqua Enviro, UK</p>	
<p><b>ROUND TABLE DISCUSSIONS &amp; NETWORKING</b></p>	

## **MODELLING**

**Chair – Dr. Maryam Kabir, Senior Anaerobic Digestion Specialist, Aqua Enviro**

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### **Process models help to optimise a major upgrade of the largest plant in New Zealand**

Takacs, I.<sup>1</sup>, Hauduc. H.<sup>1</sup>, Morgan, S.<sup>2</sup>, Brian, K.<sup>2</sup>, Loughran, P.<sup>3</sup> and Murthy, S.<sup>4</sup>, <sup>1</sup>Dynamita, France, <sup>2</sup>WaterCare, New Zealand, <sup>3</sup>Stantec, UK, <sup>4</sup>NewHub, USA

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### **Nitrogen and phosphorus mass balance investigation on four wastewater treatment works**

Dai, Z., Aqua Enviro, UK

## **KEYNOTE, POSTER AWARD AND CONFERENCE CLOSE**

**Chair – Rowland Minall, General Manager, Aqua Enviro**

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### **The Big Picture of climate change: How the water industry can correct for the current failures in macroeconomic theory to address the physical basis of climate change**

Stephen Palmer, Technical Director, Stantec, UK

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