

EUROPEAN WASTE WATER MANAGEMENT CONFERENCE & EXHIBITION

16-17th July 2019,

The Hilton Birmingham Metropole, NEC

Tuesday 16th July

Plenary

Surfers Against Sewage – the Canaries in the Coalmine

Hugo Tagholm, CEO, Surfers Against Sewage

Nitrogen and Phosphorus Removal

sponsored by



Chemical P Removal - Where has all the P gone?

Bungay, S., Helix ECL, UK

Achieving UK's lowest phosphorus levels in Southern Water

Jarvis, S.¹, Lea, G.¹, Sandalls, C.¹, Cooper, P.², ¹Southern Water, UK, ²Veolia Water Technologies, UK

Blended high performance coagulant for phosphorus removal at primary stage

Gerardo, M., Gaskin, L. and Sullivan, M., Dwr Cymru Welsh Water, UK

The implementation of the CoMag process to lower the Phosphate discharge at Severn Trent (Finham WWTW)

Goodwin, J.¹, Zsirai, R.¹, Green, R.², ¹Evoqua Water Technologies, UK, ²Costain, UK

Introducing Bluewater Bio's FilterClear Process to Severn Trent Water's phosphorus removal strategy delivered by MMB

Huo, C.¹, Vale, S.² and Wohling, A.³, ¹Bluewater Bio, UK, ²Severn Trent Water, UK, ³Mott MacDonald Bentley, UK

Initial commissioning experiences of meeting lower ammonia and total phosphorus permits

Longhurst, C.¹, Baloch, I.² and Jarvis, S.², ¹Costain, UK, ²Southern Water, UK

Tertiary treatment of municipal wastewater at low temperature: comparing biocatalyst and nitrifying sand filters

Bobbio, J.¹, Martin, B.¹, Germain-Cripps, E.¹ and Nair, A.², ¹Thames Water Utilities, UK, ²Microvi Biotech Inc., USA

Optimisation of Total Nitrogen removal sites in Southern Water

Baloch, I.¹, Till, D.¹, Jarvis, S.¹ and Liang, S.², ¹Southern Water, UK, ²Stantec, UK

The challenges of Total Nitrogen removal

Banfield, P.¹, and Butterfield, M.², ¹Veolia Water Technologies, UK, ²Hach, UK



Validating the design and performance of the 4,500 m²/m³ HiSA MBBR solution to meet regulatory consents on ammonia < 1 mg/l

Bass, K., and Dand, P. FLI Water, UK

Going for the one! Upgrading an ASP to achieve low ammonia concentrations

O'Brien, L.¹, Cooper-Smith, G.¹, Hughes, P.² and Wohling, A.², ¹Eliquo-Hydrok, UK, ²Mott MacDonald Bentley, UK

Panel Discussion: Microplastics in Wastewater: Responsibilities and Challenges

Jennifer Hughes, Chemical Investigations Analyst, Thames Water

Hugo Tagholm, CEO, Surfers Against Sewage

Alice Horton, Ecotoxicologist, Centre for Ecology and Hydrology

Emerging Contaminants

Targeted treatment of antibiotics and other pharmaceutical residues with Arvia's Nyex™ treatment process, to support the prevention of Antimicrobial Resistance (AMR)

Brown, N. and Carson, E., Arvia Technology Ltd, UK

The removal of pharmaceuticals from hospital wastewater and municipal wastewater effluent using ozonation

Van den Eijnde, T.¹, Boelee, N.C.¹, Bates, P.², Gray, J.², ¹Nijhuis Water Technology, The Netherlands, ²Nijhuis Industries UK & Ireland, UK

eXeno™: new operational strategy of MBBR to remove pharmaceuticals in municipal WWTP effluents

Torresi, E.¹, Jeal, W.², Sund, C.³, Anderson, H.R.⁴, Tang, K.⁴, Nussbaum, B.¹, Gade Anderson, H.³ and Christensson, M.¹, ¹Veolia Water Technologies, Sweden, ²Veolia Water Technologies, UK, ³Krøger A / S, Denmark, ⁴Technical University of Denmark

Novel study on performance evaluation of hybrid treatment process used for remediation of organophosphate pesticides containing wastewater

Srivastava, H., Nizam, B., Tagde, A., Samal, K. and Ramesh Rao Geed, S., Madhav Institute of Technology and Science, India

C-ION non-thermal plasma oxidative degradation of pharmaceuticals as fourth treatment step of wastewater treatment plants

Rupprich, M.¹, Obholzer, T.², Winkler, K.², Jabornig, S.² and Hazard, B.³, ¹MCI Management Center Innsbruck, Austria, ²SFC Umwelttechnik GmbH, Austria, ³Trant Engineering Ltd, UK

AMP 7 Challenges

The requirements and challenges associated with the AMP7 Pass Forward Flow Compliance Drivers

Gallagher, M., United Utilities

AMP7 capital delivery challenges for the water industry

Sunner, N., Stantec (UK) Ltd, UK

The role of the water industry in supporting sustainable economic growth for an advanced economy and the need for the water sector to maximise circular economy measures to minimise cost increases

Palmer, S., Stantec (UK) Ltd, UK

Process Control and Optimisation

Utilizing integrated software, proven algorithms and decades of chemical applications experience to continuously optimize chemical usage and meet effluent Phosphorus permit compliance levels for major Utilities in the UK

Albinet, R., Kemira Chemicals Germany, GmbH, Germany

Experiences with an improved PID-controller for nitrogen removal

Charatjan, M.¹, Binder, R.¹ and Cakir, C.², ¹Binder GmbH, Germany, ²MCC Process Technology Ltd, UK

A systems thinking approach to asset optimization – Improving the real-time operation of sewage systems and wastewater treatment plants to improve and stabilize performance, reduce OPEX and deliver low-build solutions

Önnerth, T.¹, Stentoft, P.A.¹, Jeal, W.², ¹Krüger-Veolia Water Technologies, Denmark, ²Veolia Water Technologies, UK

Site optimisation using Real Time Controlled (RTC) chemical dosing for low phosphorus consents

Sarvananthan, T., Martin, B. and Germain-Cripps, E., Thames Water, UK

Process Modelling and Design

Development of a novel effluent aeration project at Mogden STW based on a water quality model for the Upper Thames Tideway

Lodge, B., and Spooner, S., Atkins, UK

Model-based assessment of the plant: using control to optimize existing aeration capacity to meet future effluent limits

Dold, P.¹, Brian, K.¹, Conidi, D.¹, Jarvis, S.² and Nikolova-Kuscu, R.², ¹EnviroSim Associates, USA, ²Thames Water, UK

Successful delivery of innovative design solutions through optimisation and process modelling

Lewin, I., Stantec (UK) Ltd

Enhanced process models for final settlement tanks

Burt, D.¹, Wimshurst, A.¹, Jarvis, S.², ¹Frazer-Nash Consultancy Ltd, ²Thames Water, UK

Novel and efficient design of hydraulic drop structures for large sewers and flood relief schemes

Jarman, D. and Barter, P., Hydro International, UK

Computer modelling of the Nereda[®] Aerobic Granular Sludge process using commercially available models

Thompson, A.¹, Robertson, S.¹, van Bentem, A.², van Opijnen, J.², ¹Royal HaskoningDHV, UK, ²Royal HaskoningDHV, Netherlands

Wednesday 17th July

Plenary

Steve Kaye, CEO, UKWIR

Biological Phosphorus Removal

Evolving world of biological phosphorus removal for treating wastewater: science and application

Umble, A., Stantec, USA

Enhanced biological phosphorus removal with C-TECH technology applying an optimised anaerobic plug-flow selector

Jabornig, S.¹, Wutscher, K.¹, Brandstätter, R.¹ and Hazard, B.², ¹SFC Umwelttechnik GmbH, Austria, ²Trant Engineering Ltd, UK

A more rigorous aeration design of biological nutrient removal plants

Plano, S., Alford, H. and Giuffre, G, Stantec (UK) Ltd, UK

25 years of enhanced biological phosphorus removal - The Severn Trent story

Barker, R., Vale, P., Wickens, D., Luck, R. and Richards, A., Severn Trent Water, UK

Flexible configuration Bio-P: The road to Uttoxeter

Wickens, D., Jordan, T., Wilson, M. and Richard, A., Severn Trent Water, UK

Practical laboratory tests & sampling studies to calibrate process models: achieving Biological Phosphorus Removal

Kabir, M., Smyth, M. and Wallis, J., Aqua Enviro, UK

New generation of MBBR for biological treatment of carbon, nitrogen and phosphorus

Humbert, H.,¹ Lemaire, R.¹, Germain, T.², Scherpereel, G.², Bigot, B.³, ¹Veolia Technical & Performance Department, France ²Veolia Research & Innovation, France, ³Veolia Water & Technologies UK

The potential for Bio-P Removal; how low can you go?

Alford, H.¹, Jeavons, J.¹, Plano, S.¹ and Blanco, I.², Stantec (UK) Ltd, Severn Trent Water, UK

Panel Discussion: AMP 7 Challenges

Innovation

Spidflow™ for wastewater treatment: high rate clarification without chemicals

Vigneron-Larosa, N.¹, Pizzagalli, S.¹ and Gaid, K.¹ and Bigot, B.³, ¹Veolia, France, ²Veolia Water Technologies, Italy, ³Veolia Water Technologies, UK

Diverse examples of HYBACS upgrades

Biddle, J., Bluewater Bio, UK

High efficiency MBBR and the unique media clarifier

McAteer, J., Aqwise, UK

Enzymatic hydrolysis of fine sieved materials from wastewater for the production of carbon source at Amsterdam Schiphol Airport wwtp – towards CO₂ neutral operations

van den Brink, P., Scherrenberg, S.M., Al-Zuhairy, S. and Whelan, D., Evides Industriewater, The Netherlands

The fundamental biophysical relationships prevalent in municipal wastewater treatment biotreatment systems and how to use the knowledge to optimise treatment operations

Palmer, S.¹, Noone, G.² and Hoyland, G.³, ¹Stantec (UK) Ltd, ²Newcastle University, UK, ³Bluewater Bio, UK

Microalgae-based wastewater treatment: valorisation of accumulated microalgal biomass

Novoveska, L., Winter, J., Ho, F. and Murray, D., Industrial Phycology

MABR as a low-energy compact solution for nutrient removal upgrades – results from a demonstration in the UK

Sunner, N.¹, Peeters, J.², Long, Z.², Houweling, D.² and Martin, I.², ¹Stantec, UK, ²SUEZ Water Technologies & Solutions

Full scale membrane aerated biofilm reactor plant performs nutrients removal without internal circulation

Laderman, R. and Schechter, R., Fluence Corporation, Israel

Phosphorus and ammonia removal and recovery through ion exchange (IEX) process at demonstration scale

Guida, S.¹, Rubertelli, G.², Jefferson, B.¹ and Soares, A.¹, ¹Cranfield University, UK, ²University of Bologna, Italy

Analysis of the performance of the pre-treatments of the WWTP systems in Canton Cuenca-Ecuador

Rodas, V.¹, Larriva, J.^{1,2} and Alvarado, A.^{3,4}, ¹ETAPA, Empresa Pública Municipal de Telecomunicaciones, Ecuador, ²Universidad del Azuay, Ecuador, ³Universidad de Cuenca, Ecuador, ⁴Universidad de Cuenca, Ecuador

Posters

Osmotically assisted reverse osmosis technology for enhanced desalination recovery and brine concentration

Erbil, E., Bozkurt, E. and Abusharkkh, Hyrec, Turkey

Hidden biological phosphorus removal

Gerardo, M. and Sullivan, M., Dwr Cymru Welsh Water, UK

Decision support tool for the selection of technologies: resource recovery from wastewater

Sucu, S.¹, Ouelhadj, D.¹, Martinson, B.¹, Williams, J.¹ and van Schaick, M.², ¹University of Portsmouth, UK, ²HZ University of Applied Science, Netherlands

An evaluation of the wastewater treatment performance and hydraulic characteristics of submerged aerated filters

Lawrence, A., WPL and University of Portsmouth, UK

Thermal ammonia stripping as a means of ammoniacal nitrogen control

Eden, R.¹, Richardson, K.¹ and Thomas, T.², ¹Organics Ltd, UK, ²University of Warwick, UK

Tuesday 16th July

Keynote Speaker: Dr. Fabio Masi, Iridia

Dr Masi will give an Illustrated overview of the multiple benefits of constructed wetland projects around the world, including some historical perspectives

Two stage vertical flow constructed wetlands' performance and maturing in temperate climate

Khomenko, O.¹, Blanco, I.², Cook, A.², Cunliffe, D.², Dotro, G.¹, Jefferson, B.¹, Coulon F.¹, Jordan, T.², Shepherd, R.², Smith, R.², and Bajón Fernández, Y^{1*}. ¹Cranfield University, UK, ²Severn Trent Water, Coventry, UK

Workshop & Site Visit

The workshop will be an introduction to constructed wetland technologies, and then an interactive session relating to the site visits of the afternoon.

Site visits will include a visit to Severn Trent Water's Hulland Ward Wastewater Treatment works. This is an innovative constructed Wetland that treats raw wastewater (including sludge) in a two- stage vertical flow constructed wetland treatment system. We propose to visit another of Severn Trent Water's wastewater treatment works with a constructed wetland as a tertiary treatment unit.

Wednesday 17th July

Treatment of rural Agri-food production process water using low energy aerated wetland

Freeman, A.¹, Hawes, P.¹, Mathews, M.², Cooper, D.¹, ¹ARM Group Ltd, UK, ²Peak Associates Environmental Consultants Ltd, UK

Mires on the Wyre; Wetlands and the Catchment Based Approach. *How collaboration between the NGO's, Local Authorities, Regulators and Landowners can lead to effective delivery in both urban and rural environments*

Myerscough, T.¹ and Sweaney, G.², ¹Wyre Rivers Trust, UK, ²Wetland Engineering, UK

Constructed wetlands in the urban landscape / achieving wetland ecosystems services where space is limited

Fulford, G., Biomatrix Water Solutions, UK

Role of design and operational factors in the removal of pharmaceuticals by constructed wetlands

Ilyas, H.^{1*}, Masih, I.^{1,2}, van Hullebusch, E.D.³, ¹Water Treatment and Management Consultancy, The Netherlands, ²IHE Delft, Institute for Water Education, The Netherlands, ³Institut de Physique du Globe de Paris, Sorbonne Paris Cité, Université Paris Diderot, France

Willow constructed wetlands for wastewater treatment and bio-mass generation

Avery, L.M.¹, Beeseley, L.¹, Stockan, J.¹, Abel, C.¹, Tamburini, M.¹, Randerson, P.² and Hough, R.¹, ¹James Hutton Institute, UK, ² Cardiff School of Biosciences, UK

Rural Sustainable Drainage Systems : Experience on Ayrshire Farms so Far

Moir, S.E., Moir Environmental Ltd, UK

The Ingoldsthorpe Wetland one year on; nature, community and waste-water treatment

Tosney, J., Norfolk Rivers Trust, UK

The health and wellbeing benefits of access to GI

Naismith, D., WWT Consulting, UK

Mechanistic understanding of ammonia removal kinetics in floating treatment wetlands

Al Lami, M.^{1,2}, Whelan, M.J.¹, Boom, A.¹, Harper, D.¹, ¹University of Leicester, UK, ²The Higher Committee for Education Development in Iraq

Understanding the impact of vertical flow constructed wetlands sludge layer properties on its permeability

Khomenko, O., Dotro, G., Jefferson, B., Coulon F., and Bajón Fernández, Y., Cranfield University, UK

Two stage vertical flow constructed wetlands' performance and maturing in temperate climate

Khomenko, O.¹, Blanco, I.², Cook, A.², Cunliffe, D.², Dotro, G.¹, Jefferson, B.¹, Coulon F.¹, Jordan, T.², Shepherd, R.², Smith, R.², and Bajón Fernández, Y.¹, ¹Cranfield University, Cranfield, UK, ²Severn Trent Water, Coventry, UK

Combating the limitations of artificial wetlands through modular design for a UK test project

Bassey, B., Coventry University

Posters

Sprinkle sprinkle here and there? Designing feeding systems for vertical flow constructed wetlands through modelling

Urte, P. and Karpf, C., wasserWerkstat, Germany

Evaluation of performance of experimental scale sub-surface horizontal flow constructed wetland bed vegetated with water hyacinth in the treatment of domestic sewage

Abiola, A.O.¹, Adeniran, A.E.¹, Ajimo A.O.², Lamilisa, A.B., Aina, A.T.¹, Olanrewaju, O.O.⁴, ¹University of Lagos, Nigeria, ²Yaba College of Technology, Nigeria

Role of design and operational factors in the removal of pharmaceuticals by constructed wetlands

Ilyas, H.^{1*}, Masih, I.^{1,2}, van Hullebusch, E.D.³, ¹Water Treatment and Management Consultancy, The Netherlands, ²IHE Delft, Institute for Water Education, The Netherlands, ³Institut de Physique du Globe de Paris, Sorbonne Paris Cité, Université Paris Diderot, France

Supporting Organisations

