10th EUROPEAN WASTE WATER MANAGEMENT CONFERENCE & EXHIBITION

11th - 12th October 2016, Manchester Town Hall, Manchester, UK

TECHNICAL SESSIONS
• Phosphorus Removal
• Resource Recovery
• Cost Saving & Energy Recovery
• Real Time Control
• Novel Technologies
• Priority Substances
• Inlet Works & Pumping

ALSO FEATURES

CWA 12th Annual Conference - Developments in Wetland Technologies for control of Wastewater and Diffuse Pollution

CFIS Ecopharma Workshop - Improving the Quality of Surface Water in Europe

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Tuesday 11th October 2016

Phosphorus Removal

Meeting low P standards: An update from the national collaborative trials
Jennis, S., UKWIR Chemical Investigations Programme (and United Utilities)

Commissioning cloth media filters for low phosphorus limits at small sites
Long, E., Kissack, C., Wickens, D., Maxey, P., Severn Trent Water

Novel solutions for monitoring and removing phosphorus at small works
Martin, B. and Germain-Cripps, E., Thames Water Utilities Ltd

Case studies of proven solutions for reaching low P consent limits: high rate settling (Densadeg) and high rate flotation (Greendaf)
Bouchy, L., Suez Advanced Solutions UK

FilterClear for Phosphorus Removal
Huo, C., Harnett, R., Biddle, J., Bluewater Bio Ltd

Actiflo® for Phosphorous Removal
Cooper, P., Veolia Water Technologies

Innovative PhosphoReduce Technology for Phosphorus removal and harvesting from onsite sewage treatment systems – a novel strategy for eutrophication mitigation and control
Drizo, A.1,2, Gunes, K., Picard, H.,1 HeriotWatt University, Water and Soil Solutions International Ltd,2 TUBITAK Marmara Research Center Environment and Cleaner Production Institute, Turkey

Tertiary treatment of phosphate from waste water effluent using mine water – Lamesley ten years on
Thorn, P. and Chamberlain, S. The Coal Authority

Sustainable phosphorus removal with BOF steel slag and apatite in full-scale constructed wetlands
Fonseca, N.1, Germain-Cripps, E.1, Dotro, G.2, Jefferson, B.2,1 Innovation Centre, Thames Water, 2Cranfield University

Making the most of continuously moving bed polishing (bio)filters for N and P removal, using Sand-Cycle remote control
Wouters, H.1, and Heslegrave, C.2,1 RWB Special Products BV, the Netherlands, 2Aquabio Ltd, UK

Efficient Phosphorus Removal from Municipal Waste Water with Tertiary Dissolved Air Flotation
Menkveld, H.W.H.1, Wilson, J.2,1Nijhuis Water Technology, the Netherlands, 2Nijhuis H2OK, UK

Reducing Phosphorus Levels and Increasing Treatment Capacity at Upper Gwynedd Township WWTP, Pennsylvania, USA – A Design Engineer’s Prospective
Brown, W.1 and Honeywell, L.2,1 Environmental Engineering & Management Associates, Inc., 2Upper Gwynedd WWTP, USA

Inlet Works and Pumping

Tracking Pump Station Ownership Costs Generate Data for Optimum Asset Management
Hornabrook, A.1 and Miller, C.2,1 Smith & Loveless Ltd UK, 2Smith & Loveless Inc USA

“Efficiency Islands” improve overall string efficiencies for pumps
Griffith, F., ABB Drives Ltd

Efficiency and Risk in Sewage Pumping
Hill, R., Ok Process Validation Ltd

The Hydraulic Design of Distribution Chambers
Gallagher, M. and Devenish, M., United Utilities

In-Situ grit removal efficiency testing
Bjork, K. and Devenish, M.2,1United Utilities, 2Jacobs

Fine Grit removal pilot plant – results
Barter, Hydro International

Velocity Control Advancements in Grit Removal Demonstrate High Removal Efficiency Results
Hornabrook, A.1 and Miller, C.2,1 Smith & Loveless Ltd UK, 2Smith & Loveless Inc USA

Innovation in wedge wire screen design: Variable apertures using Additive Manufacturing
Geekie, L., Burns, N., Travis, D., Burns, M., Croft Filters Ltd

Real Time Control

Implementation of Real Time Control for aeration: operational challenges & lessons learned
Bobbio, J., and Jermin-Cripps, E., Thames Water Utilities Ltd

Real Time Control – A collaborative approach to realising benefits
Ainsworth, S.1 and Sanderson, R.2,1HACH, 2MWH Ltd

Advanced aeration control: lessons learned over implementation of more than 120 installations
Ripoll, F., SISLtech

Real Time Process Control Systems - The Past, Future and Present
Sunner, N., MWH Ltd
### Novel Technologies

**Tighter consents drive designs that are now in the realms of research**  
Jaffer, Y.¹, Jarvis, S.², Kaluarachchi, M.³, O’Brien, L.⁴, ¹Atkins UK, ²Thames Water UK, ³Atkins UK, ⁴Hydrok

**Innovative Hydraulic Design to meet AMP6 and OD1 drivers**  
Keegan, A. and Jack, A., United Utilities

**Good Vibrations: Alternative Technology for Primary Waste Water Treatment**  
McGlade, P., CDEnvirol

**Tightening of N consents: case study of fast start-up of Cleargreen, an Anammox-based technology for N removal from sidestreams**  
Bouchy, L., Suez Advanced Solutions, UK

**Full Nitrification at High F:M using HYBACS**  
Biddle, J.¹, Abudu, A.², Courtis, B.¹, Harnett, R.¹, ¹Bluewater Bio, ²Severn Trent

**Innovative Ammonia Removal by Industrial Electrodiatlysis: Valued By-Product or Full Destruction**  
Mitchell, F., Sparrow, B., Man, M., Saltworks Technologies Inc

**Nereda® - an innovative technology for cost-effective, energy efficient, sustainable and profitable wastewater treatment**  
Thompson, A.¹, Oliver, B.¹, Koczula, W.¹, Coelho, F.², Kersten, S.³, Giesen, A., ¹Royal Haskoning DHV UK, ²Royal Haskoning DHV B.V. Netherlands

**Building the World’s Largest MBR to Meet High-Quality Effluents**  
Monti, A., Di Poti, M., GE Water & Process Technologies

**Key MBBR design criteria and control strategies to achieve low ammonia consent compliance**  
Hussain, K., Veolia Water Technologies

**Novel applications of packaged plants (including DAF) for process resilience and enhanced programme delivery**  
Bullen, C., and Matthews, R., Siltbuster Process Solutions

**Build New or Retrofit: Project Evaluation for an ASP Faced with Oil, Grease and Phosphorus Removal Consents In Qatar**  
Bassey, B.O., Coventry University

**Local water and energy solutions – Showcase Cleantech Playground at De Ceuvel in Amsterdam: Creating a healthy decentralized water cycle in an urban environment**  
Roest, K., Smeets, P., van den Brand, T., Cortial, H., van de Merlen, K., Klaversma, E., KWR Watercycle Research Institute, The Netherlands

**Development of Flocculation Models for Improving Water Treatment**  
Egarr, D., and Horton, L., MWW Engineering

### Resource Recovery

**Recovery of sewer heat: 2 case studies on a district heating and a swimming pool application**  
Golisowicz, M., Suez Advanced Solutions UK

**Resource recovery from municipal wastewater waste streams**  
Gil Aunon M.E and Ryan S., AMEC FOSTER WHELER

**Innovative Membrane Aerated Biofilm Reactor Technology for Low-Energy Nutrient Removal – Pilot Demonstration & Case study**  
Monti, A. and Peeters, J., GE Water & Process Technologies

**Creating a market for commercial grade fertiliser from recovered phosphorus – the Crystal Green® experience**  
Gysin, A.¹ and Lycée, D.², ¹Europe Ostara, ²Nutrient Recovery Solutions Ostara

**Nutrients removal by aerobic and anaerobic granular sludge systems**  
Cinquepalmi, S., University of Southampton

**Recovering Phosphorus and Ammonia as a Struvite from Waste Water and Agricultural waste using Sono-electrochemistry**  
Morgan, P., Power and Water

**N-E-W Tech™: Resource Recovery in a Novel Functionalized Biochar, Catalytic Oxidation, Reactive Filtration Water Treatment for N/P Removal/Recovery and Pathogen/Priority Substance Destruction**  
Gregory Möller, University of Idaho and Washington State University, Moscow, USA

**Optimal Management of Treated Urban Wastewater & Sewerage for Municipal Activities Considering Irrigation Techniques**  
Foroughi, R.¹, Foroughi, H.², Karimi, A.³, ¹Dr Rahim Foroughi School of Maritime and Offshore Operation, ²Hooshang Foroughi Water and waste water Research Institution-Iran, ³Dr Akbar Karimi School of Environmental Engineering – Glasgow Caledonian Uni, College, Oman Branch
## Cost Saving and Energy Recovery

### Energy neutrality for the whole water sector – a dream or real life?
Warming, M., Danfoss VLT Drives A/S

### Beyond Kilowatts: How Advanced Process Control Reduces Totex
Mazier, S., Perceptive Engineering Ltd

### Simulation as a Tool to Evaluate OPEX for Different Process Alternatives
Dold, P., Bye, C., Conidi, D., EnviroSim Associates Ltd.

### Sustainable Wastewater Treatment using a Microbial Electrolysis Cell
Cotterill, S.1,2, Jones, C.2, Curtis, T.1, 1Newcastle University, 2Northumbrian Water Group

### Energy production from wastewaters using Microbial Fuel Cells
Brown, N.1, Dempsey, K.1, Cooksey, E.2, Holmes, S.3, 1BC Environmental, 2University of Manchester

### Advanced aeration control is real and profitable: example on a complex case study in Portugal
Massague, A., Suez Advanced Solutions UK

## Priority Substances

### Preparing for the Impact of the Water Framework Directive
Geoff Cooper-Smith, Technical Director, Facilitated Research Limited

### Removal of Priority Substances and Pharmaceutical Residues from Sewage Effluents
Khan, N., Brown, N., Parocki, D., Arvia Technology Ltd

### Chemical Investigations Programme sampling and the associated technology trial
Hughes, J., Thames Water Utilities Ltd

### Disinfection of wastes containing pharmaceutical residues
Khan, M.1, Brown, N.1, Lloyd, J.2, Mcbain, A.1, Kimber, R.2, Halsall, C.3, O’Rouke, S.3, 1Arvia Technology Ltd, 2University of Manchester, 3University of Lancaster

### Toxicity Evaluation of Paint Effluents after Myfiltration Treatment
Olorunfemi, D., Ofomata, R., Aula, P., University of Benin, Nigeria

## Conference Overview

At the time of writing this Introduction we are on the cusp of a potentially life-changing election to resolve our future involvement in the European Union. Over the past ten years of the EWWMC, many of the highlights have been driven by the UK response to environmental initiatives deriving from Brussels. Indeed for the third consecutive year much of the interest over the next two days will revolve around our attempts to meet the water quality requirements for phosphorus and priority substances in order to achieve compliance with the Water Framework Directive. Regardless of the outcome of the election, I am sure that these concerns will remain with us over the coming years.

Of equal interest to removing the major pollutants in a wastewater, is the challenge of recovering them through an economically viable route that closes the circle that forms the circular economy. This can be achieved for phosphorus, more due to the economic cost of its nuisance value, than the income derived from its re-sale, and technologies are becoming available to achieve the same outcome with other materials such as grit, heat and nitrogen. The trend over the past five years has seen more recovered with less waste and some truly innovative ideas are now emerging.

Of course one issue has never been far away and this is the question of energy use and reduction. Conventional wastewater treatment uses negligible energy expressed on a per capita basis, but with a large population the total energy use is inevitably high. As consequence we can expect lively discussion around new technologies and approaches to continue reducing its use. Enhanced modelling with models that incorporate physical aspects of the plant as well as the more traditional biological models, together with the application of real time control (RTC) are leading the way in this area and the developments that will be discussed during the event are impressive.

We are pleased once again to be holding this event in conjunction with the Constructed Wetland Association (CWA) and we hope you will take the opportunity to make new acquaintances in this area of wastewater treatment. It has also made significant advances over the past decade and the scope of the technology continues to broaden.

As with all our previous EWWMC, if you have an interest in wastewater you will most definitely find something of value here. It provides the opportunity to learn, reflect and meet new and old colleagues. Those who are delivering papers or Chairing sessions will have the opportunity to practice and hone their skills whilst those in the audience can learn from them in preparation for their own contributions in the years to come.

**Nigel Horan, Conference Director**
As part of the EU funded research project CFIS Ecopharma, a workshop is being held to discuss the issues relating to the quality of surface waters across Europe. The workshop will particularly focus on Pharmaceuticals and Personal Care Products (PPCP’s), as well as pollutants and pesticides.

**What is CFIS-ECOPHARMA?**

Ecopharma is a €1m research project and unique partnership of six organisations funded by the EU commission which aims to improve the quality of surface waters across Europe and meet new EU legislation standards. It aims to help detect chemical pollutants that pose a potential risk to human and marine health, in particular it aims to help detect contaminants in water, such as pharmaceutical products and herbicides.

View full details at [www.aquaenviro.co.uk/events/conferences](http://www.aquaenviro.co.uk/events/conferences)

**Tuesday 11th October 2016**

**Design Developments in Treatment Wetlands**

- **Range of application of treatment wetlands**
  
  Gornall, L., CAPITA | PROJEN

- **Modelling the effects of real vegetation on residence times in ponds and wetlands**
  
  Sonnenwald, F., Hart, H.², IGymer, I.², Stovin, V.², ¹The University of Sheffield, ²University of Warwick

- **New aerated wetland approaches for the treatment of de-icer contaminated storm runoff from airports**
  
  Freeman, A.L.¹, Surridge, B.W.¹, Matthews, M.², Stewart, M.², Haygarth, P.M.², ¹Lancaster Environment Centre, Lancaster University, ²Peak Associates Environmental Consultants Ltd, ³Manchester Airport Group Plc

**Developments in Sustainable Drainage systems**

- **The implementation of Rural Sustainable Drainage Systems to help reduce diffuse pollution from Scottish agriculture**
  
  Moir, S., Moir Environmental Ltd

- **Pesticide monitoring and removal across an agricultural pond according to rainfall events**
  
  Cosgrove, S., Jarvis, P., Jefferson, B., Cranfield University

- **Dairy wastewater remediation, consent compliance and resource saving of a 1.25ha Constructed Wetland**
  
  Forbes, G., and Mulholland, M., Department of Agriculture and Rural Development (DARD) Northern Ireland

- **Adapted wetland and active filter AS Eco-processes for the treatment of salted highway runoff: an integrated watershed approach**
  
  Galvez, R., and Roy, S., Laval University, Canada

**Wednesday 12th October 2016**

**Maximising Benefits of Constructed Wetlands**

- **Designing for multiple benefits**
  
  Malsen, S., JBA Consulting

- **Conservation value of constructed reedbeds**
  
  Athorn, M., University of Nottingham

- **Past, present and future: Eden Rivers Trust**
  
  Miltizarte, C., and Cleasby, W., Eden Rivers Trust

- **Habitat Restoration in the Wigan Wetlands: Restoring the Post-Industrial Landscape for Wildlife Conservation: A Case Study**
  
  Champion, M.H., The Wildlife Trust for Lancashire

**Afternoon site visits to:**

1. Salford Wetlands
2. Wigan Flashes Wetland Restoration

**Improving the quality of surface water in Europe**

11th October 2016, Manchester Town Hall

As part of the EU funded research project CFIS Ecopharma, a workshop is being held to discuss the issues relating to the quality of surface waters across Europe. The workshop will particularly focus on Pharmaceuticals and Personal Care Products (PPCP’s), as well as pollutants and pesticides.
Conference Dinner

Blackhouse – The Grill on the Alley, 5 Ridgefield, Manchester M2 6EG
Tuesday 11th October – from 7.30pm

This year we’re holding a conference dinner at The Grill on the Alley – voted in the Sunday Times’ as one of the top 10 restaurants in the Northwest, providing high quality modern British food in a great atmosphere.

The dinner is a fantastic opportunity to network and socialise with fellow delegates and enjoy an evening of fine food and wine.

Sponsorship & Exhibition

The EWMW Conference provides a fantastic opportunity to increase your company’s profile and gain brand awareness through sponsorship & exhibiting.

If your organisation works within the wastewater industry this event is not to be missed. There are various sponsorship packages and advertising opportunities available starting from just £150 – please visit www.ewmwconference.com for full details.

A standard exhibition space of 3m by 2m is just £795 (+VAT) for two days, no hidden costs. Exhibitors also receive 20% off the delegate rates.

Visit www.ewmwconference.com to download an exhibition booking form or email franceswoodhead@aquaenviro.co.uk for further details.

The Venue

Manchester Town Hall
Albert Square, Manchester, UK

The Town Hall was designed by Alfred Waterhouse, and is regarded as one of the finest examples of neogothic architecture in the United Kingdom.

The exhibition will be held in the Great Hall which is decorated with celebrated murals by Ford Maddox Brown illustrating the history of the city. The conferences sessions will take place in the impressive state rooms.

Conference Fees

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Please direct any registration queries to Clare Hunter: e. clarehunter@aquaenviro.co.uk, t. +44 (0)1924 257891

Upcoming Events

Biosolids & Organic Resources Conference, Seminar & Exhibition
15th November 2016 - 16th November 2016, Edinburgh

Emerging Compounds – Developments in Policy, Monitoring, Treatment and Future Challenges
30th November 2016, venue tbc

The BIG Phosphorus Conference and Exhibition – Removal & Recovery
February 2017, venue tbc

Challenges and innovation in decentralised treatment

Integrated renewable energy use within the water and waste industries

Valorisation options for digestates and sludge

Recovering value from food waste and crop residues

Odour Control Technologies

Wastewater & Sludge Conference in Ireland

For full details please visit www.aquaenviro.co.uk or contact Frances Woodhead E. franceswoodhead@aquaenviro.co.uk T. +44 (0) 1924 257891

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