



Residuals and Biosolids 2016 Conference

Biosolids as a Resource

April 3 – 6, 2016
Milwaukee Convention Center/ Hilton Hotel
Milwaukee, Wisconsin



This conference is held by the Water Environment Federation in cooperation with the Central States Water Environment Association and the Water Environment Research Foundation

OPENING GENERAL SESSION

**Monday, April 3, 2016
8:30AM – 12:00PM**

Further information on the Opening General Session will be forthcoming in the coming week.

TECHNICAL PROGRAM

Session 1: Regulatory

Monday, April 4, 2016

1:30PM - 3:00PM

01A 1:30PM

Navigating State Biosolids and Fertilizer Requirements: Milorganite® Distribution In The United States

Jessica Nanes, Milwaukee Metropolitan Sewerage District

01B 2:00PM

NEW Water's Challenge To Achieve Compliance With New Sewage Sludge Incinerator Rules For Existing and New Incinerators

Julie Maas, Bruce Bartel, Green Bay Metropolitan Sewerage District ("NEW Water")

01C 2:30PM

State Phosphorus Fertilizer Regulations Impact Biosolids Recycling

Ned Beecher, North East Biosolids & Residuals Association; Herschel Elliott, Penn State University

3:00PM

Session Adjourns

Alternate

Biosolids - A Wicked Problem: Land Application Regulations In Sweden and B.C. Canada

Gunilla Oberg, Margaret Morales, University of British Columbia

TECHNICAL PROGRAM

Session 2: Digestion I - Design and Modelling

Monday, April 4, 2016

1:30PM - 4:45PM

- 02A 1:30PM The Application of Fractal-Like Kinetics To The Solid-state Anaerobic Digestion**
Zhiwu (Drew) Wang, Virginia Tech; Fuqing Xu, Yebo Li, Ohio State University
- 02B 2:00PM Development of A Mechanistic Model To Understand Volume Expansion Due To Gas Holdup In Anaerobic Digesters**
Nicholas Bartek, Matthew Higgins, Bucknell University; Sudhir Murthy, DC Water; Steven Beightol, Bucknell University; Ahmed Al-Omari, DC Water
- 02C 2:30PM Methane Production Rates Can Be Predicted From Anaerobic Digester Microbial Community Structure**
Kaushik Venkiteshwaran, Michael Johnson, Daniel Zitomer, Marquette University
- 3:00PM Networking Break**
- 02D 3:45PM Long-Term Biochemical Methane Potential (BMP) Test For Estimation of Non-Biodegradable Fraction In Biosolids**
Elsayed Elbeshbishy, Ryerson University; Bipro Dhar, University of Waterloo; George Nakhla, Western University
- 02E 4:15PM Optimizing Anaerobic Digestion Performance With Silo-Shaped Reactor Configurations**
Drury Whitlock, Todd Williams, Tom Johnson, Corey Klibert, Peter Burrowes, CH2M Charles Goss, AECOM
- 4:45PM Session Adjourns**

Session continues on the next page

TECHNICAL PROGRAM

Session 2: Digestion I - Design and Modelling (Continued)

Monday, April 4, 2016

1:30PM - 4:45PM

Alternate

**Social Cost of Carbon, Can it Drive
Sustainable Biosolids Solutions?**

Charles Goss, AECOM

TECHNICAL PROGRAM

Session 3: Bioenergy

Monday, April 4, 2016

1:30PM - 4:45PM

- 03A 1:30PM Selection of Gas Turbines For Energy Recovery At San Francisco's Southeast Treatment Plant**
Christine Polo, Black & Veatch; Humphrey Ho, George Engel, Rosanna Tse, San Francisco Public Utilities Commission; Bruce Chow, David Long, Greg Knight, Black & Veatch
- 03B 2:00PM Kenosha Waste Water Treatment Plant "Energy Optimized Resource Recovery Project"**
Curtis A. Czarnecki, Kenosha Water Utility
- 03C 2:30PM New Water's Resource Recovery and Electrical Energy Project - The Value of Biosolids**
Peter Burrowes, CH2M; Bill Angoli, Bruce Bartel, Mike Erschnig, Nathan Qualls, Pat Westcott, NEW Water; Bill Desing, David Oerke, CH2M
- 3:00PM Networking Break**
- 03D 3:45PM Demand-Driven Energy Supply On Municipal WWTP Using An Anaerobic Membrane Digester**
Robert Lutze, Peter Cornel, Christian Schaum, Technische Universität Darmstadt
- 03E 4:15PM Energy Management - A Necessary Ingredient To Become A Water and Resource Recovery Facility**
Jay Surti, Julian Sandino, John Rickermann, CH2M
- 4:45PM Session Adjourns**

Session continues on the next page

TECHNICAL PROGRAM

Session 3: Bioenergy (Continued)

Monday, April 4, 2016

1:30PM - 4:45PM

Alternate 1

Thermophilic Biomethane Production From Thin Stillage Using Anaerobic Fluidized Bed Bioreactors (AnFBRs)

Hisham Hafez, GreenField Specialty Alcohols Inc.; Ahmed Eldyasti, York University; Elsayed Elbeshbishy, Ryerson University

Alternate 2

Exploring the Best And Highest Use of Biogas From Wastewater Utilities

Greg Knight, Kent Lackey, Christine Polo, Scott Carr, Jay Kemp, Black & Veatch; Aaron Brower, T.J. Lynch, City of Raleigh

TECHNICAL PROGRAM

Session 4: Facilities Operation, Management, and Planning I

Monday, April 4, 2016

1:30PM - 4:45PM

- 04A 1:30PM Scum - A Liability Or An Asset?**
Chad Simmons, Leonard Ripley, Freese & Nichols, Inc.; Farida Goyderya, City of Fort Worth
- 04B 2:00PM Planning for an Uncertain Future: Sometimes Simple is Best**
Matthew Van Horne, Deborah Mahoney, Hazen and Sawyer; Hans Tuneblom, Veolia; Roger Brooks, City of Leominster
- 04C 2:30PM Holistic Approach To Residuals Handling At F. Wayne Hill Water Resources Center: Did The Upgrades Work?**
Scott Hardy, Ron Latimer, Vivi Nguyen, Edward McCallum, Michael Bullard, Hazen and Sawyer; Brandon Brown, Robert Harris, Eric Hancock, JC Lan, Gwinnett County Department of Water Resources
- 3:00PM Networking Break**
- 04D 3:45PM High Value Resources From High Strength Wastes: Leveraging Food Production Byproducts To Reduce BNR Costs and Build Local Industry**
Christopher Wilson, Greeley and Hansen, LLC; Robert Stone, City of Richmond, Virginia; Lauren Zuravnsky, Greeley and Hansen, LLC
- 04E 4:15PM Anaerobically Digested Liquid to Cake - Managing Biosolids without Long-Term Storage**
Jose Bicudo, Dominika Celmer-Repin, Tammy Bellamy, Trevor Brown, Region of Waterloo
- 4:45PM Session Adjourns**

Session Continues on next page

TECHNICAL PROGRAM

Session 4: Facilities Operation, Management, and Planning I (Continued)

**Monday, April 4, 2016
1:30PM - 4:45PM**

**Alternate 1 A Cohesive Strategy for Wastewater Sludge
(Biosolids) Management: A UK Case Study**
Sade Olapade-Olaopa CEng MChemE, Jorge
Pacas PE, Hatch Mott MacDonald Inc.

**Alternate 2 Got Cake? Implementing Dewatering and
Cake Receiving and Truck Unloading
Facilities Saves Approximately \$500,000
Annually**
David Oerke, CH2M; William Suchodolski,
Ocean County Utilities Authority

TECHNICAL PROGRAM

Session 5: Sidestream Deammonification

Monday, April 4, 2016

3:45PM - 4:45PM

05A 3:45PM

**Sidestream Deammonification Startup –
Overcoming Challenges In Centrate
Pretreatment Process**

Hong Yin, Alexandria Renew Enterprises

05B 4:15PM

**Thermal Hydrolysis Sidestreams: Treatment
By Post Aerobic Digestion Versus Anammox**

Heidi Bauer, Thomas Johnson, Bruce Johnson,
David Oerke, CH2M

4:45PM

Session Adjourns

Alternate

**Mainstream Deammonification Using The
ANITA™ Mox Process**

Chris Thomson, Hong Zhao, Kruger Inc.

TECHNICAL PROGRAM

Session 6: Codigestion I

Tuesday, April 5, 2016

8:30AM - 11:45AM

- 06A 8:30AM WERF: Evaluation of The Unintended Consequences of Co-digestion**
Rajagopalan Ganesh, Kennedy Jenks Consultants; Sudhir Murthy, DC Water; Charles Bott, Hampton Road Sanitation District; Krishna Pagilla, University of Nevada, Reno; Steven Beightol, Mathew Higgins, Bucknell University
- 06B 9:00AM Effect of High Strength Food Wastes On Anaerobic Digestion of Sewage Sludge**
Ramola Vaidya, Gregory Boardman, John Novak, Virginia Tech; Robert Wimmer, Energy Systems Group; Mike Hanna, Black and Veatch Corporation
- 06C 9:30AM Co-Digestion of Solid Waste At WWTPs – The Next Frontier?**
Joerg Blischke, Black & Veatch
- 10:00AM Networking Break**
- 06D 10:45AM Biomethane Production From Anaerobically Digested Bioplastics**
Nicholas Benn, Marquette University - Water Quality Center; Anne Schauer-Gimenez, Margaret Morse, Mango Materials Inc.; Daniel Zitomer, Marquette University - Water Quality Center

Session Continues on next page

TECHNICAL PROGRAM

Session 6: Codigestion I (Continued)

Tuesday, April 5, 2016

8:30AM - 11:45AM

**06E 11:15AM Getting An Energy Boost From Co-Digestion
Though P3/ESCO Project Delivery**

Kurt Pfeffer, Hazen and Sawyer; Vin Morello,
Broward County Water and Wastewater
Services; Adam Bogusch, Opterra Energy
Solutions; Alonso Griborio, Hazen and Sawyer

11:45AM Session Adjourns

**Alternate 1 An Evaluation of The Potential of Co-
Digestion Programs For Energy and Nutrient
Supplementation**

Christopher Muller, Brown and Caldwell; Phil
Heck, Central Valley Water Reclamation Facility;
Trevor Lindley, Brown and Caldwell

**Alternate 2 Identifying Underutilized Digester Capacity
And Maximizing Revenue Generation Via
Codigestion: An Approach Towards Utility of
The Future**

Kam Law, John Gage, Greeley and Hansen

**Poster You Have Co-digestion, Now What? WERF
Research Into The Operational Impacts of
Co-digestion**

Matthew Vanhorne, Jared Hostetler, Hazen and
Sawyer; Lauren Fillmore, WERF

TECHNICAL PROGRAM

Session 7: Residuals and Product Issues

Tuesday, April 5, 2016

8:30AM - 11:45AM

- 07A 8:30AM Biosolids As A Resource: Using Biochar Derived From Pyrolyzed Biosolids To Remove Trace Organic Compounds**
Yiran Tong, Brooke Mayer, Patrick McNamara, Marquette University
- 07B 9:00AM Planning For and Developing A Large-Scale Soil Blending Program Using CAMBI Biosolids**
Ronald Alexander, R Alexander Associates Inc; Christopher Peot, DC Water & Sewer Authority
- 07C 9:30AM Management Protocols For Development of Value-Added Products**
Robert Reimers; Lynne Moss; James Smith
- 10:00AM Networking Break**
- 07D 10:45AM Modern Composting In Oklahoma**
Arlene Over, Black & Veatch; William Janacek, City of Midwest City, Oklahoma
- 07E 11:15AM City of Bend Water Reclamation Facility Class A Biosolids Abstract Unlikely Path To Class A Biosolids**
Scott Thompson, Water Reclamation Facility
- 11:45AM Session Adjourns**
- Alternate 1 Midwest City's Approach To A New Biosolids Compost Facility**
Bart Slaymaker, Garney Construction
- Alternate 2 Design of Low-Cost Low-Tech Biosolids Treatment Process**
Christa Meingast, Michigan Technological University

TECHNICAL PROGRAM

Session 8: Facilities Operation, Management, and Planning II

Tuesday, April 5, 2016

8:30AM - 11:45AM

- 08A 8:30AM Replace or Rehabilitate? MMSD's 24 Belt Filter Press Upgrade Challenge**
Patrick Carnahan, Symbiont; Lori Cipparone, Milwaukee Metropolitan Sewerage District; Pavel Hajda, Symbiont
- 08B 9:00AM Maximizing The Life of Biosolids Drying Assets**
Micki Klappa-Sullivan, Jennifer Wright, Milwaukee Metropolitan Sewerage District; Webster Hoener, Paul Boersma, Black & Veatch
- 08C 9:30AM From Energy Intensive Incineration To Energy Neutral Anaerobic Digestion - The Dubuque Case Study**
Randall Wirtz, Strand Associates, Inc.
- 10:00AM Networking Break**
- 08D 10:45AM The Ultimate Test of A Long Term Partnership How Charlotte Water and Synagro Partnered To Safely Manage Solids Contaminated With Polychlorinated Biphenyls**
Jean Creech, Charlotte Water; William Cotter
- 08E 11:15AM Molybdenum Pretreatment Pass Through Into Effluent and Solids**
Aaron Stephens, Nicholas Sahd, Material Matters, Inc.; Pat Mandes, Lehigh County Authority
- 11:45AM Session Adjourns**

Session Continues on next page

TECHNICAL PROGRAM

Session 8: Facilities Operation, Management, and Planning II (Continued)

**Tuesday, April 5, 2016
8:30AM - 11:45AM**

- | | |
|--------------------|--|
| Alternate 1 | How To Survive In The Fertilizer Marketplace:
Lessons From Milorganite(R)
Tom Nowicki, Milwaukee Metropolitan Sewerage
District |
| Alternate 2 | Biosolids Program Diversification To Foster
A More Sustainable and Cost-Effective
Future
Steve Wilson, Brown and Caldwell; Rick
Shanley, Clean Water Services |

TECHNICAL PROGRAM

Session 9: Nutrient Recovery

Tuesday, April 5, 2016

8:30AM - 11:45AM

- 09A 8:30AM Sustainable Ammonium Recovery From Wastewater By Using Bioelectrochemical Systems**
Mohan Qin; Zhen (Jason) He, Virginia Tech
- 09B 9:00AM Nutrient Recovery At The F. Wayne Hill Water Resources Center: WASSTRIP Design and Full Scale Start Up**
Scott Hardy, Vivi Nguyen, Edward McCallum, Ron Latimer, Michael Bullard, Hazen and Sawyer; Brandon Brown, Robert Harris, JC Lan, Tyler Richards, Gwinnett County Department of Water Resources
- 09C 9:30AM Applying Process Modeling With GPS-x™ For Understanding WASSTRIP® Impact On Nutrient Recovery And Net Solids Production**
Malcolm Fabiyi, Hydromantis USA; Ahren Britton, Ostara Nutrient Recovery Technologies; Peter Schauer, Clean Water Services; Andrew Shaw, Black & Veatch; Rajeev Goel, Hydromantis, Inc.
- 10:00AM Networking Break**
- 09D 10:45AM Bringing It All Back to Nature: A New Process to Produce Renewable Natural Gas and High Fertilizer Value Products**
Meltem Urgun-Demirtas, Yanwen Shen, Jessica Linville, Seth Snyder, Argonne National Laboratory

Session Continues on next page

TECHNICAL PROGRAM

Session 9: Nutrient Recovery (Continued)

Tuesday, April 5, 2016

8:30AM - 11:45AM

**09E 11:15AM Phosphorus Recovery At WWTP Amsterdam
West, Best Practices**

Alex Veltman, Jacqueline de Danschutter,
Waternet

11:45AM Session Adjourns

**Alternate 1 Commissioning Anuvia's First Green
Fertilizer Manufacturing Facility
Incorporating Municipal Organics**

John Donovan, Carl Hendrickson, CDM Smith;
Jeffrey Burnham, Gary Dahms, Anuvia

**Alternate 2 Solution To Phosphorus Overloading
Through Nutrient Recovery System**

Mel Kurtz, Quasar Energy Group

TECHNICAL PROGRAM

Session 10: Digestion II - Operations

Tuesday, April 5, 2016

1:30PM - 4:45PM

- 10A 1:30PM Evaluating The Impact of Digester Solids Retention Time On Digester Operations, Sludge Dewaterability and Cake and Filtrate Quality For Anaerobic Digestion With Thermal Hydrolysis Pretreatment**
Zwelani Ngwenya, Matthew Higgins, Steven Beightol, Bucknell University
- 10B 2:00PM Capacity Increase Without Evasive Retrofits – Maximize Digester Efficiency With Biological Hydrolysis**
Michael Theodoulou, Dorian Harrison, Nicholas Bonkoski, GE Power & Water
- 10C 2:30PM Turning Up The Heat - Advanced Digestion To Meet Disposal Constraints**
Kurt Pfeffer, Hazen and Sawyer, D.P.C.; Vivek Galav, City of West Palm Beach; Michael Bullard, John Koroshec, Caitlin Klug, Hazen and Sawyer
- 3:00PM Networking Break**
- 10D 3:45PM Are Your Digesters Burping, Frothing, Or Otherwise Not Behaving? - A “New” Understanding Of What’S Actually Going On Inside Could Help**
John Willis, Brown and Caldwell; Luis Carrio, NYC DEP; Jonathan Keane, Gary Newman, Brown and Caldwell; Peter Pianelli, NYC DEP; Perry Schafer, Brown and Caldwell

Session Continues on next page

TECHNICAL PROGRAM

Session 10: Digestion II – Operations (Continued)

Tuesday, April 5, 2016

1:30PM - 4:45PM

10E 4:15PM

A Systematic Analysis of Foam Drainage and Stability: Measurements, Mechanisms, and Implications For Anaerobic Digester Foaming

Chanhyuk Park, Korea Institute of Science and Technology; Domenec Jolis, San Francisco Public Utilities Commission; Slawomir Hermanowicz, University of California at Berkeley

4:45PM

Session Adjourns

Alternate 1

Effect of Sequential Improvements To Plant Operations On Biogas Generation and Solids Reduction In Bethlehem, Pennsylvania

Angela Hintz, Lauren Schifferle, ARCADIS; Jack Lawrence, City of Bethlehem

Alternate 2

Clean The Digester? Maybe Next Year . . .

Harry Mathos, City of Beloit

TECHNICAL PROGRAM

Session 11: Chemical and Biological Microconstituents In Biosolids

Tuesday, April 5, 2016

1:30PM - 3:00PM

- 11A 1:30PM Consumer Product Antimicrobials Select For Antibiotic Resistance In Anaerobic Digesters**
Daniel Carey, Daniel Zitomer, Patrick McNamara, Marquette University
- 11B 2:00PM Effect of Influent Variation In Antibiotic Resistant Bacteria and Resistance Genes On Their Fate During Anaerobic Digestion**
Jennifer Miller, Amy Pruden, John Novak, William Knocke, Virginia Tech
- 11C 2:30PM Antibiotic Resistance From Digesters To Soil**
Timothy LaPara, University of Minnesota
- 3:00PM Networking Break**
- 11D 3:45PM Fate, Exposure, and Bioavailability of Microconstituents In Biosolids**
Kuldip Kumar, Lakhwinder Hundal, Metropolitan Water Reclamation District of Greater Chicago
- 11E 4:15PM Impact of Emerging Contaminants and Biosolids Aging On Ecotoxicity In Soils**
Ryan Holzem, University of Wisconsin-GB
- 4:45PM Session Adjourns**

Session Continues on next page

TECHNICAL PROGRAM

Session 11: Emerging Contaminants / Microconstituents (Continued)

**Tuesday, April 5, 2016
1:30PM - 3:00PM**

Alternate 1

**Application of Ferrate And Ferric Iron On
The Short-term Stabilization of The Raw
Heat-Dried Municipal Sludge and
Deactivation of EDCs Constituents
(Estradiol, Ethinyl Estradiol And Bisphenol
A)**

Yue Xu; Robert Reimers; Andrew Englande,
Tulane University

Alternate 2

**Examining Methods For Estimating Risks
From Compounds of Emerging Concern In
Biosolids-amended Soil - p-Nonylphenol As
A Test Case**

Charles Staples, Assessment Technologies,
Inc.; Katie Coady, The Dow Chemical Company;
Barbara Losey, RegNet Environmental Services

TECHNICAL PROGRAM

Session 12: Thermal Processes

Tuesday, April 5, 2016

1:30PM - 4:45PM

- 12A 1:30PM Energy Recovery From Thermal Oxidation Of Wastewater Solids: State of Science Review**
Webster Hoener, James Welp, Gustavo Queiroz, Black & Veatch; Robert Dominak, Friar Consulting
- 12B 2:00PM Increasing The Fine Particulate Collection Efficiency of Existing Scrubbers Without Increasing Pressure Drop: All It Takes Is Water**
Michael Lewis, F. Michael Lewis Inc.; Lee Lundberg, Bedrock Enterprises, Inc.; David Hoecke, Enercon Systems, Inc.
- 12C 2:30PM The Little Blue Experience New Fluid Bed Municipal Sludge Incinerator With Plume Suppression System and A Provision For Future MACT Retrofit**
Levent Takmaz, Ky Dangtran, IDI; Keith Navarro, LBVSD
- 3:00PM Networking Break**
- 12C 3:45PM Getting Greener and Cleaner**
Steve Janosko, Northeast Ohio Regional Sewer District; Ben Wester, Brown and Caldwell
- 12D 4:15PM Cedar Rapids Water Pollution Control Facility -Successful Recovery of A Solids Management System From A Catastrophic Flood**
Lloyd Winchell, Brown and Caldwell; Roy Hesemann, John Ernst, City of Cedar Rapids; David Sapp, Brown and Caldwell
- 4:45PM Session Adjourns**

Session Continues on next page

TECHNICAL PROGRAM

Session 12: Thermal Processes (Continued)

Tuesday, April 5, 2016

1:30PM - 4:45PM

Alternate

**Product Upgrading During Biosolids
Pyrolysis By Using A Low-Cost Natural
Catalyst**

Zhongzhe Liu, Patrick McNamara, Daniel
Zitomer, Marquette University

TECHNICAL PROGRAM

Session 13: Thickening and Dewatering / Drying

Tuesday, April 5, 2016

1:30PM - 4:45PM

- 13A 1:30PM Sludge Conveyance System Streamlines Production For The Biosolids Dryer Facility At The Largest Wastewater Treatment Plant In North America**
Walid Al-Ani
- 13B 2:00PM Impact Of Orthophosphate On Achievable Dry Cake Solids Content And Polymer Consumption In The Dewatering Process - A Summary From Four US-Phosphorus Recovery Tests And Two Full Scale Phosphorus Recovery Installations In Europe**
Gerhard Forstner, Sarah Gruel CNP Technology Water and Biosolids, Hamburg,Germany
- 13C 2:30PM Medium Temperature Belt Dryer In Wisconsin To Produce Class A From Anaerobic Digested Sludge Containing High Strength Waste**
Dieter Weinert, Huber Technology Inc.
- 3:00PM Networking Break**
- 13D 3:45PM Solar Stabilization and Drying of Sewage Sludge In Small WWTP's: A New Process For Energy-Saving, Cost-Reduction, Pathogen-Removal and CO2-Reduction To Replace Conventional Stabilization Processes**
Markus Bux, Thero-System Industrie- & Trocknungstechnik GmbH

Session Continues on next page

TECHNICAL PROGRAM

Session 13: Thickening and Dewatering / Drying (Continued)

Tuesday, April 5, 2016

1:30PM - 4:45PM

**13E 4:15PM Study On Operation and Maintenance At A
Sludge Thickening Facility In Japan**
Motomi Ono, JTakashi Ishida, Sadahiro Ito,
Japan Institute of Wastewater Engineering and
Technology; Tomoyuki Hamada, Ministry of
Land, Infrastructure, Transport and Tourism,
National Institute for Land and Infrastructure
Management

4:45PM Session Adjourns

**Alternate 1 Drum, Belt or Paddle: A Comparison of
ThermalDrying and Energy Utilization Case
Studies**
Timothy Bauer, Peter Burrowes, CH2M

**Alternate 2 Mixed Hydrolysis Enzyme As An
Environmentally Friendly Conditioner For
Enhanced Dewatering of Waste Activated
Sludge**
Boran Wu, TXiaoli Chai, Tongji University

TECHNICAL PROGRAM

Session 14: Digestion III

Wednesday, April 6, 2016

8:30AM - 10:00AM

- 14A 8:30AM Thermophilic Startup From Mesophilic Digestate: Implementing Lab-scale Results At The Full-scale**
Karla Guevarra, Tracy Chouinard, Alexandre Miot, Bonnie Jones, San Francisco Public Utilities Commission
- 14B 9:00AM Alternative Configurations of Anaerobic Digestion and Thermal Hydrolysis To Enhance Performance**
William Barber, Diran Adalian, Jim Marx, AECOM
- 14C 9:30AM Solid-state Anaerobic Digestion For The Recovery Of Energy and Nutrients From Organic Solid Waste**
Lensey Casimir
- 10:00AM Networking Break**
- 14D 10:15AM Achieving Advanced Digestion Using Recuperative Digestion Options**
Alan Cooper, Thor Young, GHD
- 14E 10:45AM High Solids Anaerobic Digestion With Recuperative Thickening: An Effective Method To Increase Digester Capacity, Consolidate Existing Capacity, and Achieve Energy Positive Water Resource Recovery Facilities**
Juan Jossse, Sasha Rollings-Scattergood, Andrew Dale, Andrew Bendek, Anaergia, Inc.; Logan Olds, Victor Valley Wastewater Reclamation Authority (VWRA); Yaniv Scherson, Gilbert Perez, Anaergia, Inc.

Session Continues on next page

TECHNICAL PROGRAM

Session 14: Digestion III (Continued)

Wednesday, April 6, 2016

8:30AM - 10:00AM

Alternate

Biosolids Master Planning Uncovers Ample Resource Recovery Opportunities

Jane Carlson, Randall Wirtz, Strand Associates,
Inc.; Beth Vogt, Jack Russell, Fox River Water
Reclamation District

TECHNICAL PROGRAM

Session 15: Thermal Hydrolysis

Wednesday, April 6, 2016

8:30AM - 11:45AM

- 15A 8:30AM Solubilization and Refractory Substances Formation In Feedstock During Thermal Hydrolysis**
Kuang Zhu, DC Water; Tanush Wadhawan, Dynamita; Matthew Michaelis, Haydee De Clippeleir, Christine DeBarbadillo, DC Water; Siegfried Vlaeminck, Ghent University; Ahmed Al-Omari, Sudhir Murthy, DC Water; Matthew Higgins, Bucknell University
- 15B 9:00AM Optimizing Thp - The Intermediate Thermal Hydrolysis Process**
Ester Rus, Nick Mills, Aurelien Perrault, Achame Shana, Thames Water; Paal Jahre Nilsen, CAMBI
- 15C 9:30AM Continuous "Digestion-thp-Digestion At Lille (France) Wwtp réSults After One Year Operation**
Malik Djafer, Veolia
- 10:00AM Networking Break**
- 15D 10:15AM Anaerobic Digestion of Primary Solids and Thermally Hydrolyzed Waste Activated Solids**
Todd Williams, Peter Burrowes, Drury Whitlock, Kim Fries, Colin Newbery, CH2M
- 15E 11:15AM Thermal Hydrolysis - The Next Generation**
Peter Loomis, CDM Smith; Tom Jacobs, Trinity River Authority; Paul Christy, Cambi Inc.; Engin Guven, Samir Mathur, CDM Smith
- 11:45AM Conference Adjourns**

Session Continues on next page

TECHNICAL PROGRAM

Session 15: Thermal Hydrolysis (Continued)

Wednesday, April 6, 2016

8:30AM - 10:00AM

Alternate 1

So Now You Need To Cool The Sludge

Yinan Qi, Brown & Caldwell

Alternate 2

**Enhancement Of Biogas Production In The
Co-digestion Of Biosolids and Wastewater
Sludges Through The Mechanical, Thermal
And Chemical Sludge Pre-treatments**

B. Aylin Alagoz, Ayşen Erdiñçler, Orhan
Yenigün, Boğaziçi University

TECHNICAL PROGRAM

Session 16: Biosolids Science

Wednesday, April 6, 2016

8:30AM - 10:00AM

- 16A 8:30AM Reducing Biosolids Production By Oxidation-Settling-Anoxic (OSA) Process**
Galilee Semblante, Faisal Hai, University of Wollongong; Heriberto Bustamante, Nelly Guevara, Sydney Water; William Price, Long Nghiem, University of Wollongong
- 16B 9:00AM Biofermentation: A Novel Process For Reducing Biosolids Residuals In The Biological Treatment Plant**
Rob Whiteman, ABS Inc.
- 16C 9:30AM A New Wastewater Treatment Process For Achieving A Net Energy Production**
Christopher Waul, Argun Erdogan, Michael Doyle, George Smith, Evoqua Water Technologies
- 10:00AM Session Adjourns**
- Alternate Pilot Scale Testing of LCLT Wastewater Sludge Treatment Technologies**
Rebecca Green, Michigan Technological University

TECHNICAL PROGRAM

Session 17: Codigestion II

Wednesday, April 6, 2016

10:15AM - 11:45AM

17A 10:15AM

**Lessons Learned From Co-digestion
Projects From Concept Through
Implementation**

Christopher Muller, Brown and Caldwell

17B 10:45AM

**Got Gas? Identifying High Strength Wastes
Suitable For Co-Digestion at Blue Plains
AWWTP**

Lisa Boudeman, Material Matters; Bill Barber,
AECOM; Christopher Peot, DC Water

11:45AM

Conference Adjourns

Alternate

**Addressing Operational SideEffects of Co-
Digestion of Organic Waste**

Ron Appleton, Carollo Engineers; Mark Greene,
O'Brien & Gere; Rudy Kilian, Carollo Engineers