WEF Residuals and Biosolids Conference
Engaging Public and Private Sectors for Integrated Resource Recovery

Draft Technical Program
(Updated: December 11, 2017)

May 15-18, 2018
Phoenix Convention Center
Phoenix, Arizona
Pre-Conference Workshop
Tuesday, May 15th
(Separate registration fees apply)

Workshop A
8:30 AM – 5:00 PM
On Main Street: A Reflection and Review of Driving Net Zero from Operating Facilities
There are those that feel our industry often spends more time during conferences evaluating what something will do and not how it has done. So it is time to reflect with some new voices. This workshop will focus on open discussions by industry experts which showcase innovation with respect to driving net zero. We welcome you to a truly fun and interactive day, with the hope of transforming communication and idea sharing to help push the boundaries of technologies with a pinch of reality.

Workshop B
8:30 AM – 5:00 PM
High Quality Biosolids: Using Odor Predictors and Making Resilient Biosolids Products to Expand and Sustain Customers
This workshop is based on nearly complete WE&RF research on high quality biosolids (HQB) from wastewater. Included in the research are four (4) tasks associated with defining HQB, developing HQB products and demonstrating their use in urban settings, developing criteria to market HQB into high value markets, and using social media to communicate with HQB community, customers, and the public.

Workshop C
1:30 PM – 5:00 PM
Renewable Identification Numbers: Risk Management in an Uncertain Future of the Renewable Fuel Standard
Renewable NG from wastewater residuals is valued at over $30/Million BTU via the Renewable Fuel Standard (RFS) incentives; however, if the RFS fundamentally changes, the cost to produce the RNG could be greater than the wholesale value of NG. This leaves public entities in the precarious position of developing capital plans in the face of significant uncertainty. The intent of this workshop is to educate attendees about the RFS program so they can make informed decisions about biogas use.
Opening General Session  
Wed, 5/16 8:30 AM – 10:00 AM  
Full details on the Opening General Session agenda will be provided in the coming weeks.

Session 01: Product Development  
Wed, 5/16 10:45 AM – 11:45 AM  

10:45 AM  
Developing products with thermally-hydrolyzed biosolids at DC Water  
William Brower, Chris Peot, DC Water & Sewer Authority; Adrian Romero, CH2M

11:15 AM  
Biosolids Market Analysis for a Strategic Long-term Biosolids Management Program  
Irene Okioga, Jackie Jarrell, Jean Creech, Charlotte Water; Jonathan Lapsley, Richard Tsang, CDM Smith

Alternate  
Urban Biocycle Concept: From Wastewater Treatment to Resource Recovery  
Joerg Blischke, Black & Veatch
Session 02: 
Codigestion 
Wed, 5/16 1:30 PM – 4:45 PM

1:30 PM
Anaerobic Co-Digestion of Condensate from Biosolids Pyrolysis  
Seyedehfatemeh Seyed, Marquette University; Daniel Zitomer, Marquette University  
Haggerty Eng Hall

2:00 PM
Getting to Zero with Co-Digestion: Defining the Road to Energy Neutrality  
Becky Gherini, Katherine Eve, Carollo Engineers, Inc.; Curtis Bosick, Union Sanitary District;  
Rashi Gupta, Carollo Engineers

2:30 PM
Mesophilic Anaerobic Co-digestion of Manure and Thickened Waste Activated Sludge at Different Mixing Ratios  
Anahita Rabii, Ryerson University

3:45 PM
Leveraging Codigestion for Municipal Biogas Sludge Drying; Sustainable Goals - Proven Technology  
Rob Mangrum, Mangrum Consulting & Design; Sharon Foley, Harrisonburg Rockingham Regional Sewer Authority

4:15 PM
Do You Really Want that FOG? Some Considerations for Starting a FOG Codigestion Program  
Scott Carr, Edmund Kobylinski, Jorj Long, Black & Veatch; Douglas Nolkemper, Johnson County Wastewater; Rachel Swezy, Black & Veatch

Alternate
They are Doing What???? A comprehensive summary of co-digestion facilities across the US  
Robert Wimmer, ESG; Christopher Muller, Brown and Caldwell

Alternate
Preparing for a Class A Future – San Francisco’s New Biosolids Initiatives  
Natalie Sierra, Brown and Caldwell; Manon Fisher, San Francisco Public Utilities Commission;  
Karri Ving, City and County of San Francisco
Session 03:  
Dewatering Mechanisms and Methods  
Wed, 5/16 1:30 PM – 4:45 PM

1:30 PM  
Comparison of Four Laboratory Scale Dewaterability Testing Methods from a Pilot-Scale Evaluation of WAS Pre-Treatment Prior to Anaerobic Digestion  
Quintin Schermerhorn, Metro Wastewater Reclamation District; Julia Kopp, Kläranslag; Beratung Kopp; Mario Benisch, HDR Engineering Inc; Matthew Higgins, Bucknell University; Isaac Avila, Blair Wisdom, Caleb Frandsen, Anna Schroeder, Metro Wastewater Reclamation District

2:00 PM  
Evaluating the Impacts WAS Release on Anaerobic Digestion and Dewatering  
Kristen Wisdom, Isaac Avila, Elisabeth Werth, Liam Cavanaugh, Metro Wastewater Reclamation District; Wendell Khunjar, Hazen and Sawyer; Nathan Brown, Frachetti Engineering Inc.

2:30 PM  
Sludge Characteristics that Impact Dewatering of Anaerobically Digested Biosolids at Multiple Facilities  
Jose Bicudo, Regional of Waterloo Water Services Div; Jordan Gerber, Carleton University; Samantha Morris, Region of Waterloo Water Services Div; Brett Crowley; Dominika Celmer-Repin, Region of Waterloo Water Svcs Div; Wayne Parker, University of Waterloo; Matthew Higgins, Bucknell University

3:45 PM  
WE&RF: A Survey of WRRF Biosolids Identifying the Parameters Affecting Dewatering and the Effect of THP  
Jeffrey Nicholson, Virginia Tech/ HRSD; Steven Beightol, Matthew Higgins, Bucknell University; Christopher Wilson, HRSD

4:15 PM  
Effect of Potassium and Sodium on The Dewatering of Mesophilic Anaerobic Digestate  
Zwelani Ngwenya, CH2M Hill; Matthew Higgins, Steven Beightol, Bucknell University

Alternate  
Geobag for sludge drying The Good, The Bad and The Messy  
James Huchel, City of Flagstaff

Alternate  
Debunking the myth of centrifuges: Centrifuges as an energy hog  
Nathaniel Nowicki, Peiyu Tan, Hiroko Yoshida, Centrisys Corporation
Session 04: Emerging Contaminants
Wed, 5/16 1:30 PM – 3:00 PM

1:30 PM
The Fate of Microplastic in Wastewater Solids Treatment: Degradation of PE and PHB Microbeads in Aerobic and Anaerobic Digestion
Teigan Gulliver, HDR, Inc.; Junko Munakata-Marr, Linda Figueroa, Colorado School Of Mines; Allison Pieja, Molly Morse, Mango Materials

2:00 PM
Fate of ammonia, solids and recalcitrant micropollutants in anaerobic digestion and intermittent aeration of mixed sludge
Muneer Ahmad, Cigdem Eskicioglu, University of British Columbia

2:30 PM
A Reduction in Triclosan and Triclocarban in Water Reclamation Plant Influent, Outfall, and Biosolids Following the U.S. FDA’s 2013 Proposed Rulemaking on Antibacterial Products
Dominic Brose, Metropolitan Water Reclamation District Chicago; Kuldip Kumar, MWRD of Greater Chicago At Cicero Stickney WTP; Anna Liao, M&R, MWRDC

Session 05: Sidestream Management
Wed, 5/16 1:30 PM – 3:00 PM

1:30 PM
Vivianite Occurrence and Remediation Techniques in Biosolids Pre-treatment Process
Bipin Pathak, Ahmed Al-Omari, Christine Debarbadillo, DC Water; Scott Smith, Wilfrid Laurier University

2:00 PM
Wards Island WWTP Advanced Biosolids Handling and Sidestream Treatment Enhancements
Eric Auerbach, Arcadis; Mauro Orpianesi; Allen Deur, NYCDEP; Dimitrios Katehis

2:30 PM
Calcite Precipitate in Biosolids Handling Processes: A Case Study
Micah Blate, Mohammad Abu-Orf, Wendell Khunjar, Hazen and Sawyer; Jose Bicudo, Nathan Morris, Regional of Waterloo Water Services Div

Alternate
Lost Crystals– Investigating when Nutrient Recovery isn’t meeting low-P expectations
Thomas Johnson, Leon Downing, William Leaf, Colin Fitzgerald, CH2M
Session 06:
THP Technology
Wed, 5/16 3:45 PM – 4:45 PM

3:45 PM
Finding The Best Solution For Cooling On Thermal Hydrolysis Projects
Greg Knight, Black & Veatch; Erika Bailey, City of Raleigh; Michael Bullard, Hazen and Sawyer;
Dave Long, Black & Veatch; TJ Lynch, City of Raleigh; Amy Hanna, Hazen and Sawyer

4:15 PM
Thermal Hydrolysis Full Scale System Performance
Todd Williams, Marialena Hatzigeorgiou, Peter Burrowes, CH2M

Alternate
Optimized Sludge Thickening Process Control
Houssam El Jerdi, Pima County RWRD; Michael Hernandez, Hach

Session 07:
Master Planning I
Wed, 5/16 3:45 PM – 4:45 PM

3:45 PM
Ultimate Combination of Sustainable Biosolids Treatment Technologies
Dale Gabel, Peter Burrowes, CH2M; Rajkumar Rath, City and County of Honolulu; Leighton
Lum, RM Towill Corporation; Bruce Johnson, David Oerke, CH2M

4:15 PM
A Streamlined Approach to Multi Facility Master Planning with Triple Bottom Line Optimization
Paul Knowles, Hazen and Sawyer; Vera Gouchev, Electric Pump Inc; Emanuel Psaltakis, Hazen and Sawyer
Robert Sharp, Manhattan College; Matthew VanHorne, Hazen and Sawyer; Thomas Lauro, Westchester County DEF

Alternate
Fundamental Improvements to Anaerobic Digestion Systems at Water Resource Recovery Facilities
David Parry, Cameron Clark, Corey Kilbert, Paul Steele, CH2M
Session 08:
THP Master Planning
Thu, 5/17 8:30 AM – 11:45 AM

8:30 AM
Centralized Biosolids Processing with Thermal Hydrolysis and Anaerobic Digestion
    Chris Moline, HDR; Matthew Higgins, Bucknell University; Kevin Selock, WSSC; Dale Belschner
    Piscataway WWTP; Lawrence Hentz, Brian Balchunas, Atkins

9:00 AM
Model Development to Compare the Impacts of Thermal Pretreatment on Waste Activated Sludge
    Wayne Parker, University of Waterloo; Brian Jo, CH2M; Peiman Kianmehr, American University
    in Dubai

9:30 AM
Optimizing THP – 2nd Generation THP and techno-economical model for full scale implementation.
    Ester Rus, Nick Mills, Aurelien Perrault, Thames Water; Paal Yahre Nilsen, CAMBI; Inigo
    Esparza Zuraire, AD Technologies

10:45 AM
Evaluation of Thermal Hydrolysis and Incineration of Sludge for Energy Recovery at an Advanced
    Water Reclamation Facility
    Peter Burrowes, Julian Sandino, CH2M; Per Nielsen, VCS Denmark

11:15 AM
Combining thermal hydrolysis with incineration and downstream thermal processes to optimize energy
    recovery from sewage sludge
    William Barber, Cambi Inc; Paul Christy, RDP Technologies

Alternate
Trinity River Authority of Texas Starts Move from Lime Stabilization to Thermal Hydrolysis and
Anaerobic Digestion
    Samir Mathur, CDM Smith Inc; Tom Jacobs, Trinity River Authority

Alternate
Re-Feeding of Hydrolyzed Biosolids to Anaerobic Digestion for Enhanced Biogas Generation; Case
Study at Fairfield-Suisun Sewer District
    James Dunbar, Rick Mosher, Lystek International Inc.; Gregory Baatrup, Fairfield Suisun Sewer
    District; Ajay Singh, Lystek International Inc.
Session 09:
Regulatory Changes and Impact to Biosolids Management
Thu, 5/17 8:30 AM – 10:00 AM

8:30 AM
The Anatomy of an 'objective' legislative research study on biosolids
Robert Crockett, Virginia Biosolids Council

9:00 AM
Protecting Beneficial Use – Current Legal Issues Regarding Land Application
James Slaughter, Beveridge & Diamond, P.C.; Layne Baroldi, Synagro

9:30 AM
Regulatory Reaction to PFAS Disrupts Residuals Recycling
Ned Beecher, NEBRA

Alternate
Fresh Look at County-wide Biosolids Management
Prabhushankar Chandrasekeran, Ken Eyre, Greeley & Hansen; Chris Saunders, Anne Arundel County Bureau of Utility Operations; Trung Le, Greeley and Hansen LLC

Session 10:
Thu, 5/17 8:30 AM – 10:00 AM

The session will present alternative project delivery from 3 biosolids related projects. The presenters will focus on why the alternative delivery was selected and the benefits for the delivery of the project.

8:30 AM
Resource Recovery at the Source: Tempe’s P3 for Municipal FOG Recovery
David McNeil, City of Tempe

9:00 AM
Ameresco’s P3 Approach for Biogas Recovery at Phoenix’s 91st Avenue WWTP
Jim Bier, Ameresco

9:30 AM
Key Ingredients of a Successful Biosolids P3
Layne Baroldi, Synagro

Session 11:
Biofuels and Bioproducts from Wet and Gaseous Waste Feedstocks
Thu, 5/17 8:30 AM – 10:00 AM

This session will include a sample of DOE’s recent waste-to-energy awards. Information about DOE’s Small Business Innovation Research (SBIR) program, and examples of cutting edge research in producing biofuels and bioproducts from residuals and biosolids.

Speakers:
Mark Philbrick, Department of Energy
Session 12: Resource Recovery
Thu, 5/17 10:45 AM – 11:45 AM

10:45 AM
Primary sludge to valuable chemicals, hydrogen peroxide (H2O2), in microbial electrochemical cells: H2O2 production and in-situ sludge treatment
Dongwon Ki, Rick Kupferer, César Torres, Arizona State University

11:15 AM
Biologically Enhanced Primary Treatment: A Summary of Experience From Pilot, Demonstration, And Full-Scale Systems
Nathan Antonneau, Michael Doyle, Evoqua Water Technologies LLC; Bruce Johnson, CH2M; Houssam El Jerdi, Pima County RWRD; Roger Babcock, U H Civil Engineering Dept; Tiow Wong, Rm Towill Corp

Alternate
Turning Summer Heat Into Savings - Maximizing Energy Recovery From Combustion Turbine Exhaust
Anna Munson, Black & Veatch

Session 13: Odors
Thu, 5/17 10:45 AM – 11:45 AM

10:45 AM
Impact of biosolids treatment and storage conditions on odor production: Thermal Hydrolysis-Aerobic Digestion vs Alkaline Stabilization
Adrian Romero, CH2M; Mark Ramirez, DC Water; Alba Torrents, University of Maryland, College Park

11:15 AM
Characteristics of Nuisance Odor Emissions from the Sludge Drying Process
Mel Suffet, Yuge Bian, Fuqiang Liu, UCLA

Alternate
Automated Dosing of Hydrogen Peroxide Based on Real-Time Hydrogen Sulfide Measurements in an Aerated Sludge Holding Tank and Belt Filter Presses at the Norfolk, Nebraska Water Pollution Control Plant
Michael Nelson, USP Technologies; Todd Boling, City of Norfolk WPC
Session 14: Beneficial Use of Biogas: Treatment
Thu, 5/17 10:45 AM – 11:45 AM

10:45 AM
A Simple and Energy Efficient Approach To Cleaning Biogas
Lindsey Busch, Carollo Engineers; Sidharta Arora; Sean Snyder, Unison Solutions, Inc.; Donald Miller, Sanitary District of Decatur

11:15 AM
Ammonia Laden Digester Gas: The Next Frontier in NOx Emissions Control
Jason Wiser, Jim Schettler, Nate Luong, Brown and Caldwell

Alternate
Understanding Design Standards and Codes for Biogas Systems
Regina Hanson, Varec Biogas; Shayla Allen; Jim Groman, Varec Biogas
Session 15:
Master Planning II
Thu, 5/17 1:30 PM – 4:45 PM

1:30 PM
Developing a Biosolids Strategy with the Community – A Modified Approach to Long-term Biosolids Planning at the Region of Waterloo
Kaoru Yajima, Regional Of Waterloo Water Services Div

2:00 PM
Tale of Two Florida Cities - Competition and Innovation Drive Biosolids Management toward the Private Sector
Robert Forbes, Gregory Brubaker, Juan Aceituno P.E., CH2M; Manuel Moncholi, Brian Roche, JEA

2:30 PM
Weighing the Options: A Comprehensive Approach to Long-Term Biosolids Management
Matthew VanHorne, Hazen and Sawyer; Joshua Palombo, Cape May County MUA; Micah Blate, Julian Chianelli, Hazen and Sawyer

3:45 PM
Regulations Drive Nutrient Recovery and Reuse at Winnipeg’s Largest Treatment Facility: The Winnipeg North End Sewage Plant Design-Build Upgrade Project
Damian Kruk, AECOM Canada; Charles Goss, James Marx, Keith Sears, Simon Baker, AECOM

4:15 PM
When Does It Make Sense to Put All Your Eggs in One Basket and When Does It Not: A Case Study of Biosolids Process Centralization
Sebastian Smoot, HDR; Mike Gallagher, City of Baltimore; Maia Tatinclaux; Lawrence Hentz, Atkins; Thomas Kochaba, HDR Engineering

Alternate
Selecting an Advanced Anaerobic Digestion Configuration and Biogas Management Strategy for the City of Tampa
Kurt Pfeffer, Jacob Porter, Bryan Lisk, Hazen and Sawyer; Charles Bullard, Hazen and Sawyer; Karloren Guzman, City of Tampa Wastewater Department; Mitchel Chiavaroli, McKim & Creed Inc

Alternate
Biosolids Management – The Perfect Storm
Majid Khan, Dan Alford, Great Lakes Water Authority; Ed Hogan, Wade Trim
Session 16:
Anaerobic Digestion
Thu, 5/17 1:30 PM – 4:45 PM

1:30 PM
Using Struvite Precipitation to Remove Colloidal Material from Acid-Phase Digestion and the Effect on Downstream Gas-Phase Digestion
Marco Denée, AECOM; Cigdem Eskicioglu, University of British Columbia

2:00 PM
Energy Production Requires Energy Input to Digesters - A Review of Digester Mixing and Development of Improved Digester Mixing Design Methodologies
Steve Krugel, Brown and Caldwell

2:30 PM
Microbial electrochemical cells as an alternative to biochemical methane potential tests for analyzing batch anaerobic digestion kinetics
Collette Wilson, Steven Hart, Sarah Brown, Michlle Young, Dongwon Ki, Arizona State University; Prathap Parameswaran, Dept of Civil Engineering Kansas State University; César Torres, Arizona State University

3:45 PM
The Effect of Free Nitrous Acid Pretreatment on The Anaerobic Digestibility of Thickened Waste Activated Sludge
Frances Okoye, Ryerson University; Dang Ho, Western University; Siva Sarathy, Trojan UV; Wayne Parker, University of Waterloo; Elsayed Elbeshbishy, University of Ontario Mississauga

4:15 PM
Improved characterization of anaerobic digestion kinetics of mixed sludges with and without thermally pretreated WAS.
Steven Hart, Michlle Young, Dongwon Ki, Sarah Brown, Collette Wilson, Arizona State University; Prathap Parameswaran, Dept of Civil Engineering Kansas State University; César Torres, Arizona State University

Alternate
Optimizing Solid Waste Biomethanation using Hydrogen produced via Mn0 Oxidation
Mark Reynolds, Debbie Chang, Jacqueline Winston, Rosy Krajmalnik-Brown, Hinsby Cadillo-Quiroz, Arizona State University

Alternate
Taking a Bite Out of Digester Cleaning Costs
Jesus Rodriguez, JWC Environmental
**Session 17:**
**Charting New Research in Residuals and Biosolids**
**Thu, 5/17 1:30 PM – 3:00 PM**

Interactive session for residuals and biosolids professionals to inform WE&RF of research needs. Includes an overview of WE&RF’s major projects in this field.

**Speakers:**
Christine Radke, Water Environment & Reuse Foundation
Amit Pramanik, Water Environment & Reuse Foundation

**Session Breakdown:**
1:30 PM
Welcome and session overview
1:35 PM
Overview of WE&RF’s Residuals & Biosolids research portfolio
2:00 PM
Open mic discussion on research needs
2:30 PM
Voting of research priorities
2:45 PM
Recap and next steps

**Session 18:**
**Dewatering Practice and Planning**
**Thu, 5/17 1:30 PM – 3:00 PM**

1:30 PM
Impact of Iron Salt Addition on Solids Production and Operations
Perry Schafer, Henryk Melcer, Brown and Caldwell

2:00 PM
State-of-the-Practice for Dewatering of Thermally Hydrolyzed Digested Biosolids
David Oerke, CH2M; Matthew Higgins, Bucknell University; Sudhir Murthy, Salil Kharkar, Christine Debarbadillo, DC Water & Sewer Authority; Carolyn Chiu, San Francisco Public Utilities Commission; Rosanna Tse, SFPUC; Humphrey Ho, San Francisco Public Utilities Commission; Keith Panter, Ebcor Ltd, Brett Reistad; Heidi Bauer, CH2M

2:30 PM
Giving a New Life to a 20-Year Old Facility: Fountain Hills WWTP Solids Handling System Improvement Project
Jun Wang, Carollo Engineers; Dana Trompke, Fountain Hills Sanitary District; Kirk Gardiner, Andrew Gilmore, Carollo Engineers; Clark Moskop, Fountain Hills Sanitary District

**Alternate**
Overcoming Challenges with a Difficult to Handle Sludge - Centrifuge Piloting at Miami’s Central District WWTP
Manuel Moncholi; Charles Goss, AECOM; Brian Stitt, AECOM; Ismael Diaz, Gannett Fleming
Session 19:
Creating a Brand and a Following: Branding Biosolids for a Long Term Sustainable Practice
Thu, 5/17 3:45 PM – 4:45 PM
The session will present the experience from 3-4 utilities that have gone beyond producing biosolids and have developed a brand and a quality controlled product. The presenters will focus on the efforts to develop the brand and the benefits from having a material differentiated from generic biosolids. Speaker information coming soon.

Session 20:
Land Application
Thu, 5/17 3:45 PM – 4:45 PM

3:45 PM
Soil microbiome response to land application of wastewater treatment biosolids
Kevin Lambirth, UNCC; Jean Creech, Charlotte Water; Cynthia Gibas, UNCC

4:15 PM
Conifer Seedling Establishment on A Rock Disposal Site at The Mount Polley Mine to Assess Competitive Effects of Various Herbaceous Groundcovers When Using Biosolids As a Soil Amendment
Janelle Hunt, Metro Vancouver; Katie McMahan; Gabriel Holmes, Mount Polley Mining Corporation

Alternate
Agronomic Rate Analysis of Biosolids Application in Arid Geographical Regions Located near Deer Trail, Colorado
Alicia Gilley, James Johnson, Troy Gottschalk, Metro Wastewater Reclamation District
Session 21:
Codigestion: Food Waste
Fri, 5/18 8:30 AM – 11:45 AM

8:30 AM
Addressing operational side effect of co-digestion of organic wastes
   Alan Appleton, Tanja Rauch-Williams, Rashi Gupta, Carollo Engineers; Mark Greene, O'Brien & Gere Engineers Inc; Stefan Grimberg, Clarkson University

9:00 AM
Industrial waste stream co-digestion capacity evaluation and optimization using biodegradability test assays
   Spyros Pavlostathis, Georgia Institute Of Technology; Rodolfo Kilian, Toshio Shimada, Carollo Engineers; Walter Collins, Little Rock Wastewater

9:30 AM
Managing an Ever Changing Stream of Organic Materials for Co-Digestion at the Hermitage Municipal Authority - From Impounded Honey and Rotten Vegetables to Biogas Success.
   Jason Wert, RETTTEW; Thomas Darby, City of Hermitage

10:15 AM
Food Waste Digestion at Inland BioEnergy in Chino, CA- Processing of Pre-Consumer and Industrial Food Waste and Biogas Yields
   Christian Tasser, Carollo Engineers; Alfredo Ferrin

10:45 AM
City of Atlanta Bench Scale Evaluation for Co-Digestion of High-Strength Wastes with Municipal Sludge
   Jody Barksdale  Gresham Smith and Partners
   Nolton Johnson, City of Atlanta; Spyros Pavlostathis, Georgia Institute of Technology; Daniel Shaw, Black and Veatch; Giny Jacob, Gresham Smith and Partners

11:15 AM
In-situ tools for municipal anaerobic digestion optimization in response to complex input stream blend ratios of food wastes and other unconventional organic streams
   Prathap Parameswaran, Dept of Civil Engineering Kansas State University; Sandeep Sathyamoorthy, Black & Veatch

Alternate
Tipping the Balance in Favor of Class A – Integration of Economics, Community Reuse Potential, Program Risk, and Good Neighbor Ethics Drive the Shift to Thermal Drying.
   Steve Wilson, Brown and Caldwell; John Peterson, Clark Regional Wastewater District; Frank Dick, City of Vancouver Engineering

Alternate
Two Birds, One Stone: High-rate Residuals and Food Co-digestion
   Michael Curtis, Quantum Biopower; Jay Sheehan, Woodard & Curran
Session 22:
Beneficial Use of Biogas: Planning and Use
Fri, 5/18 8:30 AM – 11:45 AM

8:30 AM
Should I Use My Digester Gas or Not?
Rusty Schroedel, AECOM

9:00 AM
A Clean Start and a Closed Loop: Roseville’s Organics-to-Vehicle-Fuel Story
Alison Nojima, Adam Ross, Brown and Caldwell; Kenneth Glotzbach, Todd Jordan, George Hanson, City of Roseville

9:30 AM
"Looking Forward" - Maximizing the Value of Biogas Through Consideration of Alternative Uses
Bryan Lisk, Hazen and Sawyer; Warren Huang, Eastern Municipal Water District

10:15 AM
Turning Gas Into Green - Beneficial Use of the Energy Content of WWTP Digester Gas from Smaller Facilities
Garth Bowers, Paul Stout, Cornerstone Environmental Group, A Tetra Tech Company

10:45 AM
Road Trip: Arriving at a New Vehicle Fuel Production System for Biogas Use

11:15 AM
Lessons Learned from Planning, Designing, Constructing, and Commissioning Biogas-Fueled Cogeneration Systems
David Parry, Cameron Clark, Timothy Bauer, Brett Reistad, CH2M

Alternate
Application to use Anaerobic Digestion (AD) sludge for Enriching a Methanotrophic Mixed Culture with High Polyhydroxyalkanoates (PHAs) production capability
Ahmed Fergala, Ahmed Alsayed, York University; Saif Khattab, Reyerson University; Megan Rameriz, Universidad International; Ahmed Eldyasti, York University
Session 23:
Thermal Processes
Fri, 5/18 8:30 AM – 10:00 AM

8:30 AM
Synergistic Thermal Processing of Dry Sludge Chaff and Incinerator Ash for Energy and Resource Recovery
Zhongzhe Liu, Marquette University; Daniel Zitomer, Marquette University Haggerty Eng Hall; Patrick McNamara, Marquette University

9:00 AM
Adopting Innovative Technology - Challenges and Lessons Learned from A Utility's Perspective
Kwok-Wai Tsang, CDM Smith; Thomas Hartye, Hunter Carson, Peter Weed, MSD of Buncombe County

9:30 AM
Seizing the Opportunity for Improved Energy Efficiency of an Existing Fluid Bed Incinerator
Webster Hoener, Chris Dormier, Black & Veatch; Felicia Bergeron, Sewerage and Water Board of New Orleans

Session 24:
Greenhouse Gas Management
Fri, 5/18 8:30 AM – 10:00 AM

8:30 AM
Sidestream Management as part of an Energy Optimization Roadmap for an Advance BNR Facility
Soeren Eriksen, Ib Pedersen, Per Nielsen, VCS Denmark; Julian Sandino, CH2M

9:00 AM
Quantifying the GHG-Emission Reductions from DC Water’s Digestion/Cambi/CHP Upgrades
John Willis, Brown and Caldwell; William Brower, Chris Peot, DC Water & Sewer Authority

9:30 AM
Curbing Greenhouse Gas Emissions Through Co-digestion - A Blueprint for Combating Climate Change
Michael Theodoulou, GE Water & Process Technologies; Indra Maharjan, Ontario Clean Water Agency; Ed Dujlovic, Stratford

Alternate
Stack Emission Tests Results from Eight Existing and One New High Temperature Fluid Bed Municipal Sludge Incinerators Operating in The Us
Levent Takmaz, Ky Dangtran, SUEZ
Session 25:
Class A Technologies
Fri, 5/18 10:15 AM – 11:45 AM

10:15 AM
Pilot Scale Evaluation of a Two-Stage, Low-Cost Low-Tech Class A Biosolids Treatment Process
Karina Eyre, Tanner Keyzers, Christa Meingast, Jennifer Becker, Eric Seagren, Michigan Technological University

10:30 AM
Low-cost, low-tech biosolids treatment via long-term storage: A comparison of two pilot scale studies
Jennifer Becker, Karina Eyre, Tanner Keyzers, Christa Meingast, Eric Seagren, Michigan Technological University

10:45 AM
Simple, Cost Effective Class A Biosolids Generation: City of Nampa Class A Biosolids Pilot Study
Shelby Smith, Brown and Caldwell; Andy Zimmerman, City of Nampa WWTP

11:15 AM
Solar Heated Thermal Floor Enhanced Solar Greenhouse Biosolids Drying
Patrick Goodfellow, Ric Traeger, Brown and Caldwell; Warren Dancer, Suneel Garg, City of Surprise; Philip Wolstenholme, Brown and Caldwell

Alternate
Product Development Research with Lystek Class A Liquid Biosolids
Ronald Alexander, R Alexander Associates Inc; Michael Dougherty, Lystek International