



WEF Residuals and Biosolids Conference 2022

Technical Program

(updated January 21, 2022)

This conference is held by the Water Environment Federation in cooperation with the Ohio Water Environment Association.

Pre-conference Workshops

(Additional fees apply)

Workshop A: Using Design Thinking to Improve Public Perception of Biosolids Programs

Tuesday, May 24, 2022

8:30 a.m. – 12:00 p.m.

Coordinator: Jenn Campbell, University of Virginia

The goal of this workshop is to introduce participants to design thinking and to apply design thinking to a problem that is relevant to participants so that they are able to practice what they learn. While the foundations of design thinking are in "formal" design, one does not need to be a professionally trained designer in order to apply the principles of design thinking. This workshop will combine lessons about each of the components of design thinking with hands-on activities that participants will complete on teams of 4. These hands-on activities will allow participants to practice design thinking while addressing the opportunity of improving public perception of biosolids programs.

Workshop B: Increasing Biosolids Value and Enhancing Quality

Tuesday, May 24, 2022

1:30 p.m. – 5:00 p.m.

Coordinator: Maile Lono-Batura, Water Environment Federation

Presenters: Ronald Alexander, Ron Alexander Associates, Inc.; Chris Peot, DC Water; William Toffey, Mid Atlantic Biosolids Association; Brent Haring, KC Water

It is understood that biosolids products are often stigmatized, and this fact can devalue biosolids-based products. That stated, many biosolids programs undersell the benefits of using biosolids products, spending more time defending their product instead of promoting it for its assets. This workshop will outline how equipment purchases and process decisions can affect product quality, and therefore, distribution. It will also highlight the characteristics of specific biosolids products which make them more or less valuable, as well as quantifying some of these benefits, and explain why they affect the use of the product by specific end user groups. Featured programs will present their first-hand experience and considerations in managing biosolids programs as both a utility and business operation and the importance of orienting production with a customer first mindset.

Workshop C: Seeking the Skinny on Sludge: MOP-8 Stabilization Fundamentals
Tuesday, May 24, 2022
8:30 a.m. – 5:00 p.m.

Coordinator: Jeff Coyne, Hazen & Sawyer

This workshop features authors of the MOP-8 chapter on stabilization and will provide a base of knowledge around fundamentals of stabilization processes (such as design, operation, and construction) so that attendees can incorporate principals learned into their mission in the workplace. Topics covered include Comparison of stabilization methods, Process objectives, Process fundamentals such as microbiology, Design fundamentals such as common design parameters and sizing criteria, O&M considerations such as equipment and instrumentation and controls, and Construction considerations

Workshop D: Dewatering Optimization Workshop - Practical Ways to Improve Performance
Tuesday, May 24, 2022
8:30 a.m. – 5:00 p.m.

Coordinator: David Oerke, Jacobs

The Dewatering Optimization – Practical Ways to Improve Performance workshop will focus on practical solutions to increase dewatering performance including drier cake solids, better solids capture, reduced polymer consumption, and reduced O&M costs for dewatering processes. The information from the workshop will provide municipal attendees the knowledge and resources to better perform their jobs with lower O&M costs, consultants to provide more informative and better dewatering equipment advice and manufacturers to provide better and more optimum machine performance at lower O&M costs.

Opening General Session
Wednesday, May 25, 2022
8:30 a.m. – 11:45 a.m.

More information about the Opening General Session is coming soon.

Session 01: WRF Research Highlights: New Discoveries and Tools to Support Your Co-Digestion Program

Wednesday, May 25, 2022

1:30 p.m. – 4:45 p.m

This session will explore what has been accomplished over the past years of research, share highlights and tools developed from 3 recently completed (2022) WRF projects, and have an interactive panel discussion on the road ahead. The three WRF projects touch on different but interconnected aspects and stages of co-digestion: pre-treatment, contamination and characterization testing, and biogas quality.

- 1:30 p.m. WRF Co-Digestion Research Introduction**
Stephanie Fevig, Water Research Foundation

- 2:00 p.m. Pre-Treatment and Management Strategies**
Mohammad Abu-Orf, Hazen & Sawyer

- 2:30 p.m. Characterization and Contamination Testing**
Tanja Rauch-Williams, Carollo

- 3:00 Networking Break**

- 3:45 p.m. Biogas Quality and Characterization Testing**
Ganesh Rajagopalan, Kennedy Jenks

- 4:15 p.m Panel Discussion**

- 4:45 p.m. Session Adjourns**

Session 02: Executing Biosolids Strategies in a Changing World

Wednesday, May 25, 2022

1:30 p.m. – 4:45 p.m.

- 1:30 p.m. NEOM Biosolids Strategy**
Ross Wilson; Richard Lancaster, Andrea Poole, Atkins; Lamees Alkhamis, Nicholas Burnett, Ala'a Ragab, Adil Farooq, NEOM; Raj Chavan, Atkins
- 2:00 p.m. Starting with the End in Mind — Howard County's Journey through Master Planning and Dryer Start-up to Create a Marketable Product**
Lisa Challenger, Material Matters; Joshua Gliptis, Ms Howard County Government; Robert Hindt, Howard County Department of Public Works
- 2:30 p.m. Collaborative, Trigger-Based Biosolids Masterplan for Seven-Facility Municipality in the Chesapeake Bay Watershed**
Micah Blate; Aaron Thomas; James Howard; Chris Saunders, Anne Arundel County DPW; Charles Portner, Hazen and Sawyer
- 3:45 p.m. What Goes in Must Come Out: An Approach to Developing a Mass Balance Tool Encompassing Three WRRFs and a Biosolids Processing Facility**
Samantha O'Connor, Melanie Murphy, Philadelphia Water Department; Jacob Metch; Nicole Brown, AECOM; Michael Falk, HDR Inc
- 4:15 p.m. Drought Vs. Data: Dashboard Development for Resiliency Planning of our Biosolids Land Application Program**
Erin Sandos, South Platte Renew
- Alternate: Advancements in Wastewater Solids Management for the City of Cuenca, Ecuador**
Jay Surti, Greeley and Hansen; Juan Pablo Vicuna-Reyes, Fernando Sarmiento, Greeley and Hansen
- 4:45 p.m. Session Adjourns**

Session 03: Biosolids and PFAS

Wednesday, May 25, 2022

1:30 p.m. – 4:45 p.m.

- 1:30 p.m. Statewide PFAS Assessment of WWTPs in Michigan and Implications to the Beneficial Use of Biosolids for Land Application**
Dorin Bogdan, AECOM; Christopher Curran; Charles Goss
- 2:00 p.m. Should Pyrolysis Be Employed To Remove PFAS and Microconstituents from Biosolids? Experimental Results and Practical Considerations**
Patrick McNamara, Hari Santha, Lynne Moss, Black & Veatch; Zhongzhe Liu, California State University - Bakersfield
- 2:30 p.m. CharTech Solutions' Pyrolysis System Can Effectively Destroy Toxic PFAS**
Emma Moreside, Andrew White, CHAR Technologies
- 3:45 p.m. Eliminating PFAS - Bioforcetech Technology Shows Promise through EPA Testing**
Valentino Villa, Elizabeth Bridges, Bioforcetech Corporation
- 4:15 p.m. Fate of PFAS through Incineration at Wastewater Reclamation Facilities**
Lloyd Winchell; John Ross, Brown and Caldwell; John Norton, Xavier Fonoll Almansa, Majid Khan, Stephen Kuplicki, Great Lakes Water Authority
- Alternate: PFAS Mitigation Strategies for Sludge Management**
Eric Spargimino, CDM Smith
- Alternate: Aries Clean Technologies: Biosolids Management Through Gasification**
Joel Thornton, Aries Clean Technologies
- 4:45 p.m. Session Adjourns**

Session 04: Heat Drying Considerations
Wednesday, May 25, 2022
1:30 p.m. - 3:00 p.m.

- 1:30 p.m. Milorganite Operational Risk Register Market Assessment**
Kathleen Bertoldi, Lisa Challenger, Material Matters; William Ericson, Applied Technologies Inc; Kevin Jankowski, Milwaukee Metropolitan Sewerage District
- 2:00 p.m. Thermal Dryer Selection and Procurement Approaches in Athens-Clarke County Georgia**
C. Michael Bullard, Hazen and Sawyer; Hollis Terry, Athens-Clarke County; Alan Bowling; Edward Mccallum; Michael Hughes, Athens-Clarke County Government
- 2:30 p.m. Harnessing the Power of Dried Biosolids for Energy Recovery - A Decade of Experience**
Charles Goss; Sudhakar Viswanathan; Ray Wurm, City of Buffalo, MN

Session 05: Diversity, Equity & Inclusion
Wednesday, May 25, 2022
3:45 p.m. – 4:45 p.m.

More information about this session is coming soon.

Facility Tour

(Additional fees apply)

City of Columbus Southerly Wastewater Treatment Plant and Compost Facility Tour

Thursday, May 26, 2022

8:00 a.m. – 11:00 a.m.

The Southerly Wastewater Treatment Plant was built in 1967 and serves eastern Franklin County. Average daily flow is 114 mgd and peak capacity of 330 mgd along with an additional 110 mgd of primary treatment during excessive rain events. The plant discharges to the Scioto River. The Scioto River achieved exceptional warm water quality habitat in 2019. The City has achieved 100% beneficial reuse for 5 years in a row of their biosolids. This has been achieved due to the diverse biosolids outlet portfolio and a key part to this success is due to the Composting Facility. The City's Compost Facility was established in 1980 as an environmentally friendly alternative to recycle wastewater residuals through the composting process. The biosolids are converted into a Class A biosolids, trademark" Com-til", an organic mulch and soil amendment. Composting reduces the amount of biosolids that could otherwise be disposed of in a landfill. Com-Til product is available for sale at many retail outlets around central Ohio or wholesale at the Compost Facility. The City is excited and honored to be able to showcase their facilities to such a great event.

Session 06: Advanced Thermal Processes: Recent Developments and Implementations
Thursday, May 26, 2022
8:30 a.m. - 11:45 a.m.

- 8:30 a.m. Biosolids Pyrolysis and Gasification: Technology Advancements and an Updated Assessment**
John Ross, Brown and Caldwell; Lloyd Winchell; Dominic Brose; Thais Bremm Pluth; Xavier Fonoll Almansa, John Norton, Great Lakes Water Authority; Katherine Bell, Stantec
- 9:00 a.m. Auto-Thermal Gasification and Biosolids Drying: Achievements and Lessons Learned from a Three-Year Pilot at a Pennsylvania WWTF (>1.3 wet metric tons/hr)**
Chris Holcomb, Brian Novak, David Mooney, Ecoremedy; Robert Campbell, Pennoni Associates; John Warendt, Morrisville Municipal Authority
- 9:30 a.m. Autogenous Biochar Production from Municipal Wastewater Biosolids Feedstock**
Charles Winslow, GHD; Stanley Chilson, CET-GHD; John Harris, GHD Inc.
- 10:45 a.m. Commissioning of the First Hydrothermal Carbonization Process in the United States at the Borough of Phoenixville Wastewater Treatment Plant**
Jeremy Taylor; Dan Spracklin
- 11:15 a.m. Converting an Old Multiple Hearth Furnace to a New Pyrolyzer/Gasifier**
F Michael Lewis, F Michael Lewis Inc; Stanley Chilson, CET-GHD; Lee Lundberg, Bedrock Enterprises, Inc.; Roger Haug
- Alternate: Bioforcetech: Truly Sustainable Organics Management**
Valentino Villa, Bioforcetech Corporation; Elizabeth Bridges, Bioforcetech Corporation; Garrett Benisch, Bioforcetech
- 11:45 a.m. Session Adjourns**

Session 07: Co-Digestion
Thursday, May 26, 2022
8:30 a.m. - 10:00 a.m.

- 8:30 a.m. Co-Digestion to Class A Biosolids — Altoona Water Authority's Path to Water Resource Recovery**
Boyd Gregg, Larry Doyle, Energy Systems Group LLC; Todd Musser, Altoona Water Authority
- 9:00 a.m. More Methane and Less Landfilling? The Case for Anaerobic Co-digestion of Yard Trimmings and Wastewater**
Smith Pittman, Swette Center for Environmental Biotechnology; Bruce Rittmann, Arizona State University; Michelle Young
- 9:30 a.m. Using Mathematical Modeling to Identify Causes of Souring During Food Waste Anaerobic Co-Digestion**
Michelle Young; Ye Ji, Harbin Institute of Technology; Bruce Rittmann, Arizona State University

Session 08: Economics and Project Delivery

Thursday, May 26, 2022

8:30 a.m. - 11:45 a.m.

- 8:30 a.m. Policy Outlook Informs Sensitivity Analyses of Biogas Alternatives**
Becky Luna, Carollo Engineers; Blair Wisdom, Metro Wastewater Reclamation District; David Pier, Carollo Engineers; Arsby Norford, Metro Water Recovery
- 9:00 a.m. Monte Carlo Modeling Approach for Anaerobic Digestion and Biogas Utilization**
Laurel Schaich, CDM Smith; Justin Hutchison, University of Kansas
- 9:30 a.m. Flexibility During Design — How Goleta Sanitary District (GSD) Adapted Their Long-Term Bioenergy Recovery Strategy to Rapidly Changing External Factors**
Anna Munson, Bryan Lisk, Hazen and Sawyer; John Crisman, Goleta Sanitary District
- 10:45 a.m. Test Drive Before You Buy: Making Data-driven Life Cycle Cost Decisions**
Nicole Stephens, Stephanie Kopec, Stantec; Manuel Moncholi, Miami-Dade Water and Sewer Department
- 11:15 a.m. Gas to Grid - Virginia's First RNG Injection Facility**
DJ Wacker, RK&K; Becky Luna, Carollo Engineers; Dana Hargrove, Western Virginia Water Authority; Paul Bassette
- Alternate: Biosolids Cake Pumping Life Cycle Analysis - A True Operators Story**
Joshua Divalentino
- 11:45 a.m. Session Adjourns**

Session 09: Ohio Solids Management

Thursday, May 26, 2022

8:30 a.m. - 10:00 a.m.

8:30 a.m. Ohio Wastewater Utility Achieves Effective Biosolids Management and Asset Optimization Using Advanced Anaerobic Digestion

William Barber; Dawn Taylor; Ashish Sahu, Paul Christy, Farbod Dadgar, Cambi

9:00 a.m. Optimizing Fluid Bed Incineration

Nicholas Merchant-Wells, Northeast Ohio Sewer District

9:30 a.m. Stabilizing Solids Management | Southwest Ohio's First-Phase Evaluation of Regional Solids Handling

Jason Tincu, Greene County Sanitary Engineering Dept; Jeffrey Frechtling, Butler County Water and Sewer; Scott Reed, Black & Veatch; William Horst, Montgomery County Environmental Services; Chris Brausch, Warren County Water and Sewer Department; Lynne Moss, Bernadette Drouhard, Black & Veatch

Alternate: Benefits of a Land Application Program in Ohio

Aaron Harter, Denali Water Solutions

10:00 a.m. Session Adjourns

Technology Spotlight

Thursday, May 26, 2022

10:00 a.m. – 11:00 a.m.

Exhibit Hall

More information about the technology spotlight is coming soon.

Session 10: Beyond Nutrients: Holistic Perspectives on Biosolids Benefits
Thursday, May 26, 2022
10:45 a.m. – 11:45 a.m.

Biosolids professionals have long recognized that the benefits of land-applied biosolids extend well beyond the nutrients they supply to plants. The body of research documenting the comprehensive benefits from biosolids use – from improved ecosystem servicing to soil health and carbon sequestration – is growing. Moreover, agricultural agencies are beginning to emphasize the important role that organics such as biosolids play in soil health and greenhouse gas mitigation; this emphasis is leading to initiatives and programs that promote organics use. This session explores both current research on biosolids benefits and new programs that might help leverage the benefits of biosolids.

More information about this session is coming soon.

Session 11: Hot Topics
Thursday, May 26, 2022
10:45 a.m. - 11:45 a.m.

- 10:45 a.m. Getting Ready for Chemical Interruptions at WRRFs**
Derya Dursun, Hazen and Sawyer; Alexander Gorzalski; Michelle Chebeir,
Hazen and Sawyer; Lynn Grijalva; Bryce Danker, CH2M; Sebastien Rossouw;
Reza Sobhani, OCSD
- 11:15 a.m. Life Cycle Greenhouse Gas Emissions Modeling of Wastewater Residuals**
John Sheets, Eric Staunton, Dustin Ford, Dustin Craig, CDM Smith
- 11:45 a.m. Session Adjourns**

Session 12: Thermal Hydrolysis Processes

Thursday, May 26, 2022

1:30 p.m. - 4:45 p.m.

- 1:30 p.m. Effects of Total Solids Contents, Solids Retention Times, and Primary/Wasted Sludge Blending on the Digestibility of Thermal Hydrolyzed Municipal Sludge**
Hao Luo, Virginia Tech; Mary Strawn, Arlington County Water Pollution Control Bureau; Lisa Racey, Arlington County Water Pollution Control Bureau; Brian Balchunas, Chris Moline, Lawrence Hentz, HDR Inc; Malcolm Taylor, Washington Suburban Sanitary Commision; Caroline Nguyen; Zhi-Wu Wang, Virginia Tech
- 2:00 p.m. Cooking Without Gas: Reducing Sludge Management Costs Using THP (Thermal Hydrolysis Process) in Plants Without Anaerobic Digestion**
Guk Jeong, M.C. Cha, BKT Co. Ltd.; Jon Liberzon, Tomorrow Water; Young-soo Choi, Jae-min Choi, BKT Co. Ltd.
- 2:30 p.m. Effects of Recalcitrant Nutrient Formation in Thermal Hydrolysis Pretreatment and Anerobic Digestion of Municipal Sludge at Loudoun Water's Broad Run Water Reclamation Facility**
Rafael Iboleon, Dr Virginia Tech CEE Department - Occoquan Laboratory; Wendell Khunjar, Hazen & Sawyer PC; Ankit Pathak; Kendra Sveum, Loudoun Water; Brittany Curtis; Bradley Schmitz, Loudoun Water; Zhi-Wu Wang, Virginia Tech
- 3:45 p.m. Lessons Learned in Laying Out the Piscataway WRRF Bio-Energy Project**
Dian Zhang, Virginia Tech; David Socha, Stantec; Samantha Babbitt; Bryce Swillum; Michael McWhirter, Stantec
- 4:15 p.m. Resource Recovery with Advanced Digestion Processes: Atlantic Treatment Plant FOG and CAMBI System**
Christopher Muller, Brown and Caldwell; Christopher Wilson, Hampton Road Sanitation District
- Alternate: Getting it Started with Alternative Delivery Approaches to THP**
Amy Hanna; Aaron Brower, City of Raleigh; Stanley Dabek, WSSC Water; Matt Van Horne, C. Michael Bullard, Hazen and Sawyer; Robert Wierzbicki, PC Construction; Joe Uglevich
- 4:45 p.m. Session Adjourns**

Session 13: Current and Future Regulatory Trends and Their Impact on Biosolids Programs

Thursday, May 26, 2022

1:30 p.m. - 4:45 p.m.

1:30 p.m. Legal Issues Impacting Land Application: Critical Regulatory and Litigation Developments

Andrew Silton, Beveridge & Diamond PC; James Slaughter, Beveridge & Diamond, P.C.

2:00 p.m. The State of Biosolids Regulations in Florida: What's Florida Man Up to Now?

Nicole Cohen, Jody Barksdale, Carollo Engineers

2:30 p.m. Life After Landfills: A Statewide View of Changing Biosolids Management in Georgia

Bernadette Drouhard, Black & Veatch; Amanda Carroll; Greg Knight; Stephen Simpson, Lynne Moss, Black & Veatch

3:45 p.m. School House Rock: How a Bill becomes a Law and then Fully Defined (using the Renewable Fuel Standard as an Example)

John Willis, Brown and Caldwell; Robert Bastian, US Environmental Protection Agency

4:15 p.m. Think Regionally, Act Locally: Enhancing Biosolids Program Redundancy and Resiliency

Hari Santha, Black & Veatch; Allison Deines, Alexandria Renew Enterprise; Mary Strawn, Arlington County Water Pollution Control Bureau; Maureen O'Shaughnessy, Prince William County Service Authority; Lori Stone, Black & Veatch

Alternate: Communicating PFAS: How to Manage the Press and the Public Reaction to a PFAS Panic

Mike McGill, WaterPIO

4:45 p.m. Session Adjourns

Session 14: Research and Innovation
Thursday, May 26, 2022
1:30 p.m. - 4:45 p.m.

- 1:30 p.m. Machine Learning for Dewatering Optimization**
Micah Blate; Derya Dursun, Katya Bilyk, Hazen and Sawyer
- 2:00 p.m. The IntensiCarb™ Technology as High-Rate Process for Anaerobic Biosolids Fermentation Intensification and Nutrient Recovery**
Gholamreza Bahreini; George Nakhla, Western University; Diego Rosso, University of California, Irvine; Katherine Bell, Stantec; Domenico Santoro, USP Technologies; Frances Okoye; Ferenc Hazi, Dynamita; Sudhir Murthy
- 2:30 p.m. Full Scale Pilot of a Novel Struvite Precipitation System at the Provo WRP**
Eric Auerbach, Arcadis; Matt Kessler, Shellie Turnbow, City of Provo; Mudit Gangal, SUEZ - Water Technologies & Solutions; James Goldhardt, Coombs Hopkins; Matthew Militello; Michael Broyles, Arcadis
- 3:45 p.m. Tailored Recovery of Ammonia and Phosphorus from Anaerobic Membrane Bioreactor (ANMBR) Treated Swine Permeate for Use as Targeted High-Quality Fertilizer**
Arvind Damodara Kannan, Kansas State University; Evan Heronemus; Kasuni Gamage, Ganga Hettiarachchi, Kansas State University; Prathap Parameswaran
- 4:15 p.m. Reducing the Toxicity in Hydrothermal Liquefaction aqueous phase using a New Anaerobic Digestion Bioreactor to maximize resource recovery from sludge**
Xavier Fonoll Almansa, GLWA; Andy Schmidt, Pacific Northwest National Laboratory; Andrea Busch; Michael Thorson, Pacific Northwest National Laboratory; John Norton, Great Lakes Water Authority
- Alternate: Reimagining Carbon with Willows, Biosolids, and Coal Mine Closure: The BIOSALIX Story**
John Lavery, Mark Teshima, SYLVIS Environmental Services Inc.
- 4:45 p.m. Session Adjourns**

Session 15: Realizing Biosolids Benefits - Case Studies in Master Planning and Land Application

Thursday, May 26, 2022

1:30 p.m. - 4:45 p.m.

1:30 p.m. Master Planning for Near-Term and Long-Term Residuals Management for a Multi-WRRF Utility

Ruth Borgmann, C. Michael Bullard, Hazen and Sawyer; James Struve; Angie Price, Renewable Water Resources

2:00 p.m. Pima County Biosolids Master Plan - Long Term Sustainable Solutions

Ty Morton; Houssam Eljerdi, Pima County Regional

2:30 p.m. A Bigger-Picture Look at Florida's Nutrient-Loading and the Relative Insignificance of Biosolids-Derived Products

John Willis, Brown and Caldwell; Jody Barksdale, Carollo Engineers; Tracy Chouinard, Brown and Caldwell; Rob Gaylord

3:45 p.m. Persistence of Biosolids Amendment Benefits on Soil Health and Microbial Activities Eight Years After Cessation of Long-Term Biosolids Application

Benjamin Morgan, Metropolitan Water Reclamation District of Greater Chicago; Guanglong Tian; Olawale Oladeji; Albert Cox, Metropolitan Water Reclamation District of Greater Chicago; Heng Zhang, MWRD of Greater Chicago At Cicero Stickney WTP; Edward Podczerwinski

4:15 p.m. Techniques in Restoration and Reclamation of Surface Mines Achieve a Powerfully Layered Narrative for Municipal Biosolids Generators and Mines Alike ...So What's Stopping Us?

John Lavery, Mark Teshima, SYLVIS Environmental Services Inc.

Alternate: From Zero to Hero in Building a New Biosolids Land Application Program: A Case Study for Northern California

James Dunbar, Jacob Collins, Lystek International Limited

4:45 p.m. Session Adjourns

Session 16: Thickening & Dewatering
Friday, May 27, 2022
8:30 a.m. - 10:00 a.m.

- 8:30 a.m. Who Will Take the 'Cake'? An Evaluation of Two Emerging Dewatering Preconditioning Technologies**
Heidi Bauer, Jacobs; Zwelani Ngwenya; David Oerke, Jacobs
- 9:00 a.m. Enhanced Cake Dryness and Granulation via Efficient Energy Evaporation of Surface Moisture using Combined Centrifugal Dewatering and Spray Drying Techniques**
Jim Hanson, GEA Mechanical Equipment US, Inc.
- 9:30 a.m. Full-scale Pilot Test of a Hydrogen Peroxide Treatment for Dewatering Improvement**
Felipe Gutierrez, CP&Y Inc; Mahmood Jebur, University of Arkansas; Tad Eaton, San Antonio Water System
- Alternate: Combined Chemical Conditioning Municipal Anaerobic Digestate for Dewatering Enhancement and Improvement of Biosolids Quality**
Umme Sharmeen Hyder, Elsayed Elbeshbishy, Ryerson University
- 10:00 a.m. Session Adjourns**

Session 17: Current Factors in Biosolids Markets

Friday, May 27, 2022

8:30 a.m. - 11:15 a.m.

- 8:30 a.m. Investigating Alternative Products and Markets to Reduce Sewage Sludge Incinerator Capacity Limitations for Citizens Energy Group (Indianapolis, IN)**
Kathleen Bertoldi, Lisa Challenger, Material Matters
- 9:00 a.m. City of Rock Hill, South Carolina - Biosolids Market Assessment**
Kathleen Bertoldi, Lisa Challenger, Material Matters
- 9:30 a.m. Biosolids Products and Phosphorous Claims**
Ronald Alexander, R Alexander Associates Inc
- 10:15 a.m. Bioresources Review and Market Study**
Ross Wilson; Esme Piechoczek, Richard Lancaster, Andrew Thompson, Sarah-Jane Westlake, Atkins; Garry Strange, Thames Water; Raj Chavan, Atkins
- 10:45 a.m. Results from the 2nd National Survey of Biosolids Regulation, Quality, End Use and Disposal in the U.S.**
Janine Burke-Wells; Jennifer Lichtensteiger
- Alternate: Making Your Solids Plan a Solid Plan: Biosolids Planning in Uncertain Times**
Jonathan Sandhu, Gulf Coast Authority; Charles Goss, Susan Spore, AECOM
- 11:15 a.m. Session Adjourns**

Session 18: Biosolids to Energy - How Technologies can Convert Biosolids to a Renewable Energy Source

Friday, May 27, 2022

8:30 a.m. - 11:15 a.m.

8:30 a.m. Designing Cogeneration Engines to maximize Energy Efficiency: focusing on Heat Recovery

Eric Auerbach, Arcadis; Brandon Fox, City of Columbus Department of Public Utilities; Mariana Costa Tomazelli

9:00 a.m. Beneficial Biogas — Lakewood, Ohio's Design Build Anaerobic Digester Upgrades and Beneficial Biogas Usage

Timothy McCann, Ralph Schroedel, AECOM; Todd Schurig; Mirko Kucinic

9:30 a.m. A Unique Approach to Solids Management with Energy Recovery

Bruce Bartel, Jacob Becken, New Water, Green Bay Metro Sewerage Dist;

10:15 a.m. When Average isn't Good Enough: Cogeneration Evaluation and the Value of Electricity

Tracy Chouinard, Alison Nojima, Brown and Caldwell; Kenneth Klittich

10:45 a.m. Biogas to Renewable Natural Gas - Achieving Net Zero Energy

Eric Wilgenbusch, Unison Solutions

Alternate: Increased Biogas Production and Reduced Solids Generation Using An Innovative Technology: A Full-scale Study at Goleta Sanitary District, California

Alex West; James Dunbar, Lystek International; Steve Wagner, John Crisman, Goleta Sanitary District; Mohammad Abu-Orf, Hazen & Sawyer

Alternate: Virginia Key WWTP Anaerobic Digester Startup, Got Gas? Learning to Deal with the Miami Beach Bloat

Manuel Moncholi, Miami-Dade Water and Sewer Department; Wayne Myers

11:15 a.m. Session Adjourns

Session 19: Digestion and Stability

Friday, May 27, 2022

8:30 a.m. - 11:15 a.m.

- 8:30 a.m. Lessons Learned from an Anaerobic Digestion Improvements Project at the Jackson Pike WWTP in Columbus, Ohio**
David Parry, Marialena Hatzigeorgiou, Jacobs; Brandon Fox, Troy Branson, City of Columbus
- 9:00 a.m. Acid+ Digestion - How Columbus Fixed their Acid Phase Digesters and Is Researching a New Process that Intensifies Digestion and Recovers Phosphorus**
Dante Fiorino, Brown and Caldwell; Darin Wise, City of Columbus Department of Public Utilities; John Willis, Christopher Muller, Brown and Caldwell
- 9:30 a.m. Linking Anaerobic Digester Microbiomes with Resistance to Organic Overloads**
Ashley Berninghaus; Tyler Radniecki, Oregon State University
- 10:15 a.m. Case Study Highlighting the South San Francisco-San Bruno Water Quality Control Plant's Initiatives to Increase Digestion Capacity within Existing Plant Infrastructure via High-Performance Mixing, Recuperative Thickening, and High Solids Digestion.**
Yaniv Scherson, Margaret Laub, Anaergia Services LLC; Brian Schumacker
- 10:45 a.m. Rapid Digester Start-up for the Lower Reedy WRF Anaerobic Digesters - Taking a Last-Minute Detour**
C. Michael Bullard, Hazen and Sawyer; Angela Allen, Renewable Water Resources; Ruth Borgmann, Hazen and Sawyer; Meredith Bridwell
- Alternate: Optimizing Two-Stage Anaerobic Digestion**
Justin Wippo, Thermal Process Systems
- 11:15 a.m. Session Adjourns**

Session 20: Leaving Landfills - Discussing the Future of Organics Management
Friday, May 27, 2022
10:15 a.m. - 11:15 a.m.

Join our panel to discuss what organics management looks like in a post-landfill future with a panel of industry experts. Topics will include Source Separated Organics, Public-Private Partnerships, and Policy Schemes, as well as the content from the abstract below.

Technologies and Processes for Pretreatment and Management of Source Separated Organics

Derya Dursun, Mohammad Abu-Orf, Hazen and Sawyer; Micah Blate; Kelly Landry, Hazen and Sawyer; Robert Sharp, Manhattan College; Nicole Kaiser

More information about this session is coming soon.

11:15 a.m. Session Adjourns