

RESIDUALS AND BIOSOLIDS 2021

A Virtual Event

MAY 11-13

Residuals and Biosolids 2021: A Virtual Event

Technical Program

(Updated April 27, 2021)

**Virtual Event
May 11-13, 2021**

**Pre-Conference Workshops
May 5 and 6, 2021**

RESIDUALS AND BIOSOLIDS 2021

A Virtual Event

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General Virtual Event Information

The Residuals and Biosolids 2021 Virtual Event will be held online on an interactive platform where you'll gain access to seven Technical Sessions as well as a Technology Spotlight, Company Demos and Networking Opportunities. Technical Sessions will be presented in two ways: Live and Simulated-live (or simu-live) to encourage the most interaction and engagement between speakers and registrants.

Live sessions will take you to a Zoom meeting where the speakers and moderators are giving their presentations on screen in real time while you watch. There will be one session each day hosted live on Zoom. If you are not available at the scheduled time, you can watch a recording after the Zoom meeting has concluded.

Simu-live sessions will be pre-recorded complete with moderator interaction and questions and the recordings will be played for you at a certain time and date during the virtual event. Speakers will be present at that time to answer any questions asked by our audience live via chat. If you are not available at the scheduled time, you can watch a recording after the streaming video has concluded.

Pre-Conference Workshops

(Additional fees apply)

Workshop A: Dewatering Optimization – Practical Ways to Improve Performance
Wednesday, May 5, 2021, 11:00 a.m. – 2:00 p.m. ET (UTC -4) – Live on Zoom

- 11:00 a.m. Introduction and Goals for the Workshop**
David Oerke, Jacobs, WEF RBC Solids Separation Subcommittee, Conference Task Force Chair
- 11:05 a.m. Fundamental Floc Properties and Dewatering, Highlights of WEF Dewatering Research Project**
Matt Higgins, Bucknell University
- 11:35 a.m. Mechanical Optimization of Dewatering Equipment**
Adam Parmenter, HDR
- 12:00 p.m. Interactive Zoom Breakout Session Discussion from Operators: “What has Worked,” Lessons Learned, and Automation Options**
- 12:30 p.m. Optimization Through Data, Experimentation and Training**
Mike Gates, Chris Maher, Clean Water Services
- 12:55 p.m. Break**
- 1:05 p.m. Reducing Dewatering Costs Through an Optimization Program**
Ken Tagney, EMWD; Rashi Gupta, Carollo
- 1:30 p.m. Virtual Panel Discussion: Address attendees questions and challenges and discuss dewatering optimization issues**
- 2:00 p.m. Workshop adjourns**

Pre-Conference Workshops

(Additional fees apply)

Workshop B: Biosolids Communication Toolkit - Stop Poo-Pooing Biosolids Communication

Thursday, May 6, 2021, 1:00 p.m. – 4:15 p.m. ET (UTC -4) – Live on Zoom

- 1:00 p.m. Welcome and Introductions**
Travis Loop, Water Environment Federation
- 1:05 p.m. Agenda Review and Zoom Orientation**
Sam Villegas, Raftelis
- 1:10 p.m. Breakout #1: Table Networking**
- 1:20 p.m. Orientation to the Toolkit**
Sam Villegas, Raftelis
- 1:30 p.m. Group chat: Why is communicating about biosolids hard?**
Sam Villegas, Raftelis
- 1:35 p.m. The Power of Proactivity**
Melissa Elliott, Raftelis
- 1:45 p.m. A Strategic Approach: 4 Steps**
Matt Wittern, Raftelis
- 1:55 p.m. Breakout #2: Research Rally**
Sam Villegas, Raftelis
- 2:15 p.m. Stakeholder Mapping Demo**
Melissa Elliott, Raftelis
- 2:30 p.m. Break**
- 2:45 p.m. Mastering the Messaging**
Sam Villegas, Raftelis
- 3:00 p.m. Individual Assignment: Rewrite this**
- 3:20 p.m. Handling the Hit Piece**
Matt Wittern, Raftelis
- 3:35 p.m. Breakout #5: Hit Me with Your Best Shot**
Matt Wittern, Raftelis
- 4:00 p.m. Wrap up/Parting Thoughts**
Sam Villegas, Raftelis
- 4:15 p.m. Workshop adjourns**

Virtual Event – Tuesday, May 11, 2021

Opening General Session: Rebuttal to the OIG Report by the W4170 Multi-State Research Committee

Tuesday, May 11, 2021, 11:00 a.m. – 12:30 p.m. ET (UTC -4) – Live on Zoom

- 11:00 a.m. Welcome from the Conference Co-Chairs**
Kathryn Crestani, NEORS
Brandon Fox, City of Columbus
- 11:05 a.m. Introduction**
Greg Kester, California Association of Sanitation Agencies
- 11:10 a.m. Assessment of Unregulated Chemicals of Concern Identified in the OIG Report**
Dr. Nick Basta, Ohio State University
- 11:30 a.m. Assessment of Pathogens and Antibiotic Resistant Organisms and Genes Identified in the OIG Report**
Dr. Ian Pepper, University of Arizona
- 11:50 a.m. Assessment of Per- and Polyfluoroalkyl Substances (PFAS) in Biosolids**
Dr. Linda Lee, Purdue University
- 12:00 p.m. USEPA Concerns with the OIG Report, Update on Progress EPA Has Made in Addressing OIG Recommendations**
Liz Resek, USEPA
- 12:10 p.m. Q&A**
- 12:30 p.m. Session Adjourns**

Company Demo

Tuesday, May 11, 2021, 12:30 p.m. – 1:00 p.m. ET (UTC -4)

Sponsoring companies demonstrate the latest products, resources and problem-solvers with live chat Q&A

- 12:30 p.m. Giving Your Digester an Organic Diet: Keys to a successful Organics, FOG, and High Strength Waste receiving program**
Presented by: Vaughan Company

Virtual Event – Tuesday, May 11, 2021

Tuesday, May 11 schedule cont. from previous page

Session 01: PFAS and Contaminants of Concern in Biosolids

Tuesday, May 11, 2021, 1:00 p.m. - 2:00 p.m. ET (UTC -4) – Simu-Live

Moderators: Rusty Schroedel, AECOM; Anahita Rabii, Ryerson University

- 1:00 p.m. A Risk Assessment Model of PFAS Transport and Fate from the Beneficial Reuse of Biosolids at Renewable Water Resources**
Cameron Colby, Rewa
- 1:20 p.m. Insights into Emerging Organic Contaminants Behavior in Different Full-Scale Sludge Treatment Systems**
Narasimman Lakshminarasimman, University of Waterloo; Sarah Gewurtz, Shirley Anne Smyth, Environment and Climate Change Canada; Wayne Parker, University of Waterloo
- 1:40 p.m. Removal and Transformation of PFAS from Biosolids in a High Temperature Pyrolysis System - A Bench Scale Evaluation**
Todd Williams, Scott Grieco, Bahman Bani, Jacobs; Andrew Friedenthal, Andrew White, CharTech Solutions

Company Demo

Tuesday, May 11, 2021, 2:00 p.m. – 3:00 p.m. ET (UTC -4)

Sponsoring companies demonstrate the latest products, resources and problem-solvers with live chat Q&A

- 2:00 p.m. Is it time to rebuild/replace your Belt Filter Press or Centrifuge?**
Presented by: Alfa Laval
- 2:30 p.m. Finding OPEX Savings in Your Filter Cake**
Presented by: Evoqua

Tuesday, May 11 schedule cont. on following page

Virtual Event – Tuesday, May 11, 2021

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Session 02: Innovative Biosolids Process Enhancements

Tuesday, May 11, 2021, 3:00 p.m. - 4:15 p.m. ET (UTC -4) – Simu-Live

Moderators: Richard Tsang, CDM Smith; Wick Warden, Allgeier, Martin, and Associates

- 3:00 p.m.** **Wide-Reaching Improvements Through Direct TWAS Dewatering**
Casey Mentzer, Michael Drinkwater, Truckee Meadows Water Reclamation Facility
- 3:19 p.m.** **Enhancing Sludge Dewaterability and Phosphate Removal Through a Novel Chemical Dosing Strategy Using Ferric Chloride and Hydrogen Peroxide**
Vahid Ghodsi, Siva Sarathy, Trojan Technologies; John Walton, Ian Watson, USP Technologies; Elsayed Elbeshbishy, Ryerson University; Domenico Santoro, University of Western Ontario
- 3:38 p.m.** **Which Class A Drying Process Has the Most Advantages for the Dry Creek Water Reclamation Facility, Cheyenne, Wyoming**
Zwelani Ngwenya, David Oerke, Kile Snider, Steve Tamburini, Jacobs; Nate Kie, Matthew Buelow, Cheyenne Board of Public Utilities
- 3:57 p.m.** **Thermal Drying Economics: Integrating Market Analysis and Lifecycle Costs to Assess Thermal Drying Feasibility**
Natalie Sierra, John Ross, Brown and Caldwell

Virtual Event – Wednesday, May 12, 2021

Session 03: Optimizing Digestion and Co-Digestion

Wednesday, May 12, 2021, 11:00 a.m. – 12:15 p.m. ET (UTC -4) – Simu-Live

Moderators: Manny Moncholi, Stantec; Bob Forbes, Jacobs

- 11:00 a.m. Can Microbial Acclimation Work To Avert Inhibition During FOG Co-Digestion?**
Juliet Ohemeng-Ntiamoah, Jacobs; Tania Datta, Tennessee Tech University
- 11:19 a.m. Source Separated Organic Food Waste Characteristics and Implication for Co-digestion Performance, Operation, and Design**
Pedro Puente, Lutgarde Raskin, University of Michigan; Rashi Gupta, Christian Tasser, Carollo Engineers; Larissa Schwinghammer, Christian Schaum, Bundeswehr University Munich; Tanja Rauch-Williams, University of Michigan
- 11:38 a.m. Case Study of Pennsylvania’s First Net Positive Resource Recovery Facility — The Hermitage Success Story**
Thomas Darby, City of Hermitage; Jason Wert, Rettew; Sudhakar Viswanathan, Veolia Water Technologies
- 11:57 a.m. Process Understanding of Full-scale Micro-aeration to Improve Biogas Quality and Anaerobic Digestion.**
Adrian Romero, Josef Cesca, Jacobs; Derek Van Rys; Bruce Johnson, Bart Kraakman, Jacobs

Company Demo

Tuesday, May 11, 2021, 12:30 p.m. – 1:00 p.m. ET (UTC -4)

Sponsoring companies demonstrate the latest products, resources and problem-solvers with live chat Q&A

- 12:30 p.m. Lystek THP: Sustainable Solutions for Biosolids Management**
Presented by: Lystek

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Virtual Event – Wednesday, May 12, 2021

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Session 04: Odor Control and Digestion Intensification Solutions **Wednesday, May 12, 2021, 1:00 p.m. - 2:00 p.m. ET (UTC -4) – Simu-Live**

Moderators: Bernadette Drouhard, Black & Veatch; Tom Nangle, Brown & Caldwell

- 1:00 p.m. Identifying the Source, Cause, and Solution of Biosolids Odor at a Maryland Water Resource Recovery Facility**
Hao Luo, Virginia Tech; Dian Zhang, Stantec; Malcolm Taylor, Caroline Nguyen, Solomon Quansah, Washington Suburban Sanitary Commission; Zhi-wu Wang, Virginia Tech
- 1:20 p.m. Using Finished Compost to Treat and Control Emissions from Active Biosolids Composting**
Larry Wong, Artin Laleian, Thomas Knapp, Brian Polson, Matt Hutton, Carl Glass, Los Angeles County Sanitation Districts
- 1:40 p.m. How Low Can We Go — Evaluating the Limits of SRT and Loading Rates with THP-AD Systems for Process Intensification**
Matthew Higgins, Steven Beightol, Bucknell University; William Barber, Cambi Inc.; Haydee De Clippeleir, DC Water & Sewer Authority; Christine Debarbadillo, Black & Veatch; Sudhir Murthy, DC Water & Sewer Authority

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Virtual Event – Wednesday, May 12, 2021

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Technology Spotlight

Wednesday, May 12, 2021, 2:00 p.m. – 3:00 p.m. ET (UTC -4) – Simu-Live

Similar to mobile sessions at in-person events, technology spotlights allow companies to showcase products and services in technical and educational presentations combined with equipment or hands-on visuals. There will be a live chat Q&A.

- 2:00 p.m. Digester Defense by Sludge Screening**
Ed Fritz, Chip Pless, Crista Renouard, Huber Technologies
- 2:15 p.m. An Overview of Biogas H₂S Removal Technologies**
James Krumwied, Bartlett & West
- 2:30 p.m. Treatment of All types of Digestate from Mesophilic to Thermophilic to THP Pre-Treated sludge using the DEMON® Anammox Process**
Chandler Johnson, Dan Air, Andrea Otto, World Water Works
- 2:45 p.m. Lessons Learned from Piloting Biosolids Composting and Leading Towards to a Successful Biosolids Management Program**
Brian Fuchs, W.L. Gore & Associates

Session 05: Land Application and Surface Disposal Benefits and Challenges

Wednesday, May 12, 2021, 3:00 p.m. – 4:00 p.m. ET (UTC -4) – Live on Zoom

Moderators: Lynne Moss, Black & Veatch; Trudy Johnston, Material Matters, Inc.

This session will be a panel discussion featuring the presenters and topics listed below:

Can Biosolids Land Application Improve Soil Health?

Jim Ippolito, Ken Barbarick, Colorado State University; Tom Ducey, USDA-Agricultural Research Service; Erin Jenkins, Blair Corning, South Platte Renew

Landfill Challenges & Biosolids Disposal Trends Analysis

Kathleen Bertoldi, Trudy Johnston, Material Matters Inc.

Protecting Beneficial Use – Current Legal Issues Regarding Land Application

James Slaughter, Andrew Silton, Beveridge & Diamond PC

Virtual Event – Thursday, May 13, 2021

Session 06: Thermal Process Optimization

Thursday, May 13, 2021, 11:00 a.m. – 11:45 a.m. ET (UTC -4) – Simu-Live

Moderators: Jerry Yu, SDMC America Technology Inc; David Dubey, Evoqua Water Technologies

11:00 a.m. The R2E2 Experience — Energy Performance Two Years On at the Green Bay Facility

Peter Burrowes, Jacobs; William Angoli, Bruce Bartel, Pat Westcott, Nathan Qualls, Jacob Becken, NEW Water; Steven Graziano, Jacobs

11:22 a.m. Update - NEORSO Southerly WWTC Biosolids Combustion Optimization

Lloyd Winchell, Brown and Caldwell; Kathryn Crestani, Douglas Reichlin, NEORSO

Company Demo

Thursday, May 13, 2021, 11:45 p.m. – 1:15 p.m. ET (UTC -4)

Sponsoring companies demonstrate the latest products, resources and problem-solvers with live chat Q&A

11:45 a.m. Maximizing Methane Using Membrane Based Upgrading with Methanis
Presented by: Suez

12:05 p.m. Redefining Biosolids: This is OurCarbon™
Presented by: Bioforcetech Corporation

12:45 p.m. Welcome to Juneau, Alaska: A Virtual Site Tour of Mendenhall Wastewater Treatment Facility
Presented by: Veolia Water Technologies

1:05 p.m. Award Winning & Long Lasting Biosolids Drying with Biogas
Presented by: Komline-Sanderson Corporation

Session 07: Sustainability: Planning, Action, and Communication

Thursday, May 13, 2021, 1:30 p.m. – 2:30 p.m. ET (UTC -4) – Live on Zoom

Moderators: Natalie Sierra, Brown & Caldwell; Anna Munson, Hazen and Sawyer

1:30 p.m. A Public-Private Success Story for Biosolids Management in Northern California
James Dunbar, Lystek International; Jordan Damerel, Fairfield Suisun Sewer District

1:50 p.m. Sludge Conditioning and Renewable Natural Gas at the Capital Region Water A WTF
Eric Auerbach, Arcadis; Jess Rosentel, City of Harrisburg

2:10 p.m. Transitioning to Class A Biosolids Products — Panacea, Problematic, or Both? Evaluation of and Guidance for End Product Markets for Generators and Consultants.
Jean Creech, Semi-retired, formerly Charlotte Water

Virtual Event – On Demand

Houston Biosolids: From the Ranch to the City and Back Again On Demand – Watch any time during the virtual event!

A video tour of the Houston Water Almeda Sims Wastewater Treatment Plant's heat dryer facilities will give viewers an idea of how these facilities fit into the City-wide biosolids management program and regional beneficial and revenue-generating land application efforts. Emphasis will be placed on the decades long and obvious value of using heat dried biosolids as a fertilizer product and soil amendment at Texas cattle ranch pasture lands and hay fields.

The tour will briefly describe what some refer to as "Houston's Nutrient Cycle"; how both major and minor nutrients travel from pasture and hay forage for cattle, into beef products, through many urban customers, through the plant, into biosolids/soil amendment products, and are returned back to the pasture and hay. The video will provide a brief description of the liquid side of the Almeda Sims plant and the preliminary waste sludge process units, but the tour focus will be on how thickened sludge is conditioned; dewatered; heat dried; silo stored; loaded and transported; and utilized by several Texas ranches.

This video was developed by Houston Water plant process engineers and operators, youth members of a local 4-H group, and local ranchers.