

wef.org/ResidualsBiosolids

#WEFBiosolids

RESIDUALS AND BIOSOLIDS CONFERENCE

CONFERENCE PROGRAM

PRE-CONFERENCE WORKSHOPS

May 24

CONFERENCE

May 25–27

EXHIBITION

May 25–26

2022



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

Local Connections, Global Ideas

Our clients face tough decisions with limited resources. That's why we support leading water associations—like WEF—to help make great things possible for our industry.

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Stephanie Spalding, PE
East Region Biosolids Lead





Residuals and Biosolids Conference 2022

May 24-27
Greater Columbus Convention Center
Columbus, Ohio

#WEFBiosolids



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

To Our Friends and Colleagues:

Welcome to the great city of Columbus! The Water Environment Federation (WEF) in cooperation with the Ohio Water Environment Association (OWEA) are excited to bring Residual and Biosolids professionals and practitioners together for four days of learning, sharing and celebrating the value of our work. After almost two years of living through the COVID-19 pandemic, we acknowledge that engagements like this have been drastically altered from what we had become accustomed to. It's truly a pleasure to offer this in person event where you will hear unique perspectives on residuals and biosolids themes all while enjoying a great environment to network and discuss the latest hot topics with your peers.

As Chairs, we are confident of the value of this Conference, and we also hope you enjoy your time here. Please seek us out and share your experiences with us so we can reinvest that knowledge into continued success of this conference. Take a minute to complete a survey to provide us with your valuable input or share your thoughts with staff.

Conference Highlights

Pre-Conference Workshops: Three Workshops are being offered on Tuesday that will enhance your educational experience by joining either *Increasing Biosolids Value and Enhancing Quality*, *Seeking the Skinny on Sludge: MOP-8 Stabilization Fundamentals* or *Dewatering Optimization Workshop - Practical Ways to Improve*. Choose the one that will increase your agency's effectiveness when you return to the office.

Opening General Session: The Opening General Session will include a welcome from WEF and OWEA, with keynotes from Lina Zeldovich, Nick Basta, Ned Beecher, and Jamie Gellner. Join your friends and colleagues and share the experience to kick-off the three-day conference of diverse technical sessions, mobile session, tours, and networking. We are excited to start the conversation on Diversity, Equity, and Inclusion in Project Planning in the afternoon at Session 5. Please attend this session to start thinking about the connections between residual and biosolids handling and the impact on local communities.

Technical Sessions, Technology Spotlights, and Exhibition: The technical program was developed to provide presentations that cover a wide range of topics, including regulatory trends, innovation, and the benefits (and challenges) of biosolids disposal. In addition, there will be a technology spotlight (previously mobile session) allowing attendees to interact directly with exhibitors to gain hands-on knowledge about existing products and services, along with highlighting emerging topics and technologies that are new to the marketplace. Throughout the conference, attendees can gain first-hand knowledge by visiting the many exhibitors who will be joining us this year.

Tour: We encourage you to take part in our local tour. The tour takes place at the City of Columbus Southerly Wastewater Treatment Plant and Compost Facility on May 26th. You can add it on to your registration onsite as long as seats are available.

We encourage you to make the most of our time together. Step away from your daily routine of meetings, emails, deliverables, approvals and submittals to take a well-deserved pause. Here, you have rich opportunities to interact, in person, with the best and brightest in our sector - in an open, engaging, and unique program. This is a great time for you to think beyond the day to day about how you can increase your impact back home!

On behalf of WEF, the conference steering committee, the dedicated staff, and all moderators and speakers, we invite you to make this conference experience your best yet!

Thank you for joining us!

Sincerely,



Kathryn Crestani
Conference Co-chair



Jason Tincu
Conference Co-Chair

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Section headers are color coded by **General Conference Information** (aqua), **Program** (yellow), and **Exhibition and Sponsors** (red).

CONFERENCE CO-CHAIRS



Kathryn Crestani
Conference Co-chair
NEORS



Jason Tincu
Conference Co-Chair
Greene County

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CONFERENCE STEERING COMMITTEE

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Inc.*

Daniel Domigan
Intrinsic Services

Brandon Fox
City of Columbus

Aaron Harter
*Denali Water
Solutions*

Trudy Johnston
*Material Matters,
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Kelly Valek
NEORS

Wick Warden
*Allgeier, Martin and
Associates*

CONFERENCE COMMITTEES

CONFERENCE PROGRAM COMMITTEE

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Arcadis

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Cambi Inc

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*NEW Water
(GBMSD)*

Mario Benisch
HDR

John Berrigan
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An Ovivo Company*

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Carollo Engineers

Sarah Guzman
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*Mortenson
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Meg Hollowed
*Veolia Water
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Joseph Husband
Arcadis

Matthew Jalbert
*Trinity River
Authority*

CONFERENCE COMMITTEES

CONFERENCE PROGRAM COMMITTEE, continued

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*Orege North
America*

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*MWRD of Greater
Chicago*

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Kimley-Horn

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*MHF Services (of
Industrial Furnace
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Josh Lutz
*City of Columbus
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Anni Santos
Stantec

Scott Schaefer
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Jay Surti
Greeley and Hansen

Matthew Tabisz
Synagro

Jeremy Taylor
*SoMax
Environmental*

Hollis Terry
*Athens-Clarke
County*

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Brown and Caldwell

Lloyd Winchell
Brown and Caldwell

Randall Wirtz
Strand Associates

Christen Wood
Summit County

Jerry Yu
*SDMC America
Technology Inc*

Dian Zhang
Stantec

HEALTH AND WELL-BEING

WEF's priority at all meeting and events is always the health and safety of our community. Refer to this conference's website for the most current protocols posted under "Health and Well-Being": www.wef.org/ResidualsBiosolids

WEF SOCIAL MEDIA POLICY

WEF strongly encourages the use of social media to share your experiences at our event. This includes sharing interesting quotes or information, taking pictures with colleagues, and using the event hashtag: **#WEFBiosolids**. However, to protect intellectual property, videotaping, filming, or live-streaming of any workshop or technical session presentation, or exhibit booth is prohibited. Any participant violating this policy must relinquish the media and may be removed from the conference. Also, promotional or commercial use of photographs taken at WEFTEC and other WEF conferences is strictly prohibited. If you are interested in content, materials, or products, please consider talking to the speaker or exhibitor, who may provide the information or grant permission.

CODE OF CONDUCT

WEF's Vision

A community of empowered professionals creating a healthy global water environment.

Core Values

Leadership, Passion, Scholarship, and Collaboration, and Service

WEF Policies

WEF respects and takes the broadest view of human diversity and inclusion and is committed to providing a professional, safe, and welcoming environment at its events for all water professionals and their guests. WEF expects all sponsors, speakers, attendees, media, exhibitors and other participants to uphold our commitment to diversity and inclusion by helping us provide a positive conference environment for everyone.

For more information, please see WEF's Diversity and Inclusivity Policy, as well as WEF's Non-Discrimination and Harassment Policy at www.wef.org/about/about-wef.

Reporting Concerns

If you have any concerns during this conference, please stop by the conference registration desk or you may email the WEF Executive Director Walter Marlowe at wmarlowe@wef.org.

CONFERENCE SAFETY AND SECURITY

Greater Columbus Convention Center

400 N High St
Columbus, OH 43215
Phone: (614) 827-2500

In case of an emergency, please call (614) 827-2547 for assistance in all medical or security situations. You can dial 2547 from any house phone.

Hilton Columbus Downtown

Phone: (614) 384-8600

Pick-up a house phone to connect directly with Hotel Security in the event of a medical or other emergency. From your hotel room please dial "0" for hotel operator.

REGISTRATION

All events are held in the Greater Columbus Convention Center.

The Registration Desk will be open at the following times:

Tuesday, May 24	7:30 a.m. – 5:00 p.m.
Wednesday, May 25	7:30 a.m. – 5:00 p.m.
Thursday, May 26	8:00 a.m. – 5:00 p.m.
Friday, May 27	8:00 a.m. – 11:45 a.m.

PRESENTER AND MODERATOR INFORMATION

All presenters, alternates, and moderators should sign in at the conference Registration Desk and attend their assigned briefing.

Presenters and alternates participating Wednesday, Thursday, and Friday should attend their assigned briefing. Please attend only once unless speaking on multiple days. The Speaker Briefing and room schedule is as follows:

Wednesday, May 25 — Room A 220 *Sessions 1 through 5	7:30 a.m. – 8:15 a.m.
Thursday, May 26 — Room A 220 *Sessions 6 through 20	7:30 a.m. – 8:15 a.m.

COMMITTEE MEETINGS

Association of Biosolids and Byproducts Associations (ABBA) Subcommittee

Wednesday, May 25, 2022 | 12:00 p.m. – 1:30 p.m.
Room: A 223

National Biosolids Partnership (NBP)

Wednesday, May 25, 2022 | 2:00 p.m. – 3:00 p.m.
Room: A 223

WEF RISE Focus Group - Digester Mixing Technologies and Full-scale Applications Meeting

Wednesday, May 25, 2022 | 3:00 p.m. – 3:45 p.m.
Room: A 225

Solids Separation Subcommittee

Thursday, May 26, 2022 | 7:00 a.m. – 8:15 a.m.
Room: A 223

Green House Gas Subcommittee

Thursday, May 26, 2022 | 11:45 a.m. – 12:45 p.m.
Room: A 223

Bioenergy Technology Subcommittee

Thursday, May 26, 2022 | 12:15 p.m. – 1:15 p.m.
Room: A 123 – A 125

Ohio Biosolids Meeting

Thursday, May 26, 2022 | 12:45 p.m. – 1:30 p.m.
Room: A 220

Specialty Conference Subcommittee

Thursday, May 26, 2022 | 1:00 p.m. – 2:00 p.m.
Room: A 225

Biosolids Product Use and Communications Subcommittee

Thursday, May 26, 2022 | 5:00 p.m. – 6:00 p.m.
Room: A 223

Residuals and Biosolids Committee Meeting

Friday, May 27, 2022 | 7:00 a.m. – 8:15 a.m.
Room: A 123 – A 125

RECEPTIONS AND MEAL FUNCTIONS

Networking Luncheons

Lunch will be provided for all registered attendees on both full days of the Residuals and Biosolids Conference. Use this opportunity to meet your fellow participants from across the country and abroad while enjoying a luncheon. The menu has been created with a variety of dietary preferences in mind, but please let staff know if you have specific restrictions.

Wednesday, May 25 and Thursday, May 26

Exhibit Hall

11:45 a.m. – 1:30 p.m.

Wednesday Luncheon sponsored by: Brown and Caldwell

Networking Reception

Join fellow Residuals and Biosolids Conference attendees, speakers, and exhibitors in the Exhibit Hall to network and relax while enjoying a complimentary beverage and light hors d'oeuvres. Grab a Bingo Card and complete the board to potentially win a prize.

Wednesday, May 25

Exhibit Hall

4:45 p.m. – 6:15 p.m.

Hosted by the RBC Young Professionals Subcommittee, with generous donations from: Vaughan Company, HUBER, and Cache Environmental Laboratories, P.C.

Networking Breaks will take place in the Exhibit Hall at the following times:

Wednesday, May 25

10:00 a.m. – 10:45 a.m. and 3:00 p.m. – 3:45 p.m.

Thursday, May 26

10:00 a.m. – 10:45 a.m. and 3:00 p.m. – 3:45 p.m.

Friday, May 27 - Foyer outside session rooms

10:00 a.m. – 10:15 a.m.

Sponsored by: Denali Water Solutions

CONTINUING EDUCATION

Continuing Education files will be available online at this link:

<https://ceu.experientevent.com/WEF222>

You will be able to view your participation details and access your Continuing Education Credits for Technical Sessions online. Attendees will have daily access to their certificates and transcripts through an online portal for 1 year from the event date. After that time, CE documentation will be available through WEF's new CE Credit Archive site: <https://www.wef.org/resources/wef-ce-credit-archive>. These details will be posted on the PH page of WEF.org and emailed to event participants after the conference.

How Do I Receive Credit For this Conference?

In order to receive credit for participation in any of the training sessions attendees will be required to scan their badge when entering and exiting each session room. Credits obtained during this event will be available at the end of the conference using the link provided above.

Pre-Conference Workshops:

WEF offers Continuing Education Units (CEUs) for participation in workshops. **One CEU is the equivalent to 10 hours** of training or formal instruction. These are distributed for structured, relevant professional training above and beyond that of initial certification or employment in a particular field.

Technical Sessions:

WEF offers Professional Development Hours (PDHs) for participation in technical sessions. **A PDH is defined as one hour** spent engaged in an activity that contributes to the advancement or enhancement of professional skills or scientific knowledge of a professional engineer or operator.

When Will I Receive Credits For this Conference?

Certificates and transcripts are available for download during and post conference. ***WEF will send an email after the conference to remind each attendee where they can obtain these credits.*** Please keep in mind that most state licensing boards require the individual licensees to report continuing education credits.

Note: Educational Credits will not be recorded, and documentation will not be distributed unless the attendee is a confirmed registrant of this event and the proper steps are completed as indicated in the directions provided.

CONTINUING EDUCATION

Are WEF Continuing Education Credits Approved in My State?

WEF applies for approval in many states and will be happy to work with individuals and Member Associations for additional state or agency approvals upon request. In addition, WEF has been approved as a Training Provider through the following:

The Florida Board of Professional Engineers, the New York State Department of Education, and the Ohio EPA. Several states typically accept WEF PDH and CEU credits as issued by WEF. For example: California (CWEA), Florida and New Jersey.

What Else Do I Need to Know?

WEF follows the International Association of Continuing Education and Training (IACET) guidelines along with state-specific regulations to achieve strict policies and procedures regarding its Continuing Education Program. WEF calculates education credits following a standardized method that is the most widely accepted by certification and licensing agencies. However, many states differ in the type and/or number of credits they will approve for educational events. Because of this, participants are responsible for exploring their state requirements and for ensuring that WEF conference credits are accepted.

Service and Support...

WEF maintains a database of all continuing education files for a minimum of 7 years. You may contact WEF's Customer Service Team between the hours of 8:30 a.m. and 5:00 p.m. EST, Monday through Friday for questions related to WEF Programs - 1-800-666-0206 or csc@wef.org.

State Credit Calculations:

Each state has its own set of CE credit requirements. Some state licensing boards will accept CEUs for session under 3 hours in length. Some use different acronyms for training credits. In most instances the credits issued by WEF can be converted to meet state specific requirements that vary from the system used by WEF. This is usually managed at the state level using the following conversion:

1.0 CEU = 10 Hours of session time

1.0 PDH = 1 Hour of session time

1.0 Contact Hour = 1 Hour of session time

For example: **1.7 CEU Credits = 17.0 PDH** depending on individual state regulations.

**CEU & PDH credits are available for Workshops to Professional Engineers licensed in the state of New York (NYSED).*

For more information regarding WEF's Continuing Education Program, please visit www.wef.org/ResidualsBiosolids.

WEF RESIDUALS AND BIOSOLIDS MY SHOW PLANNER

New Online Planner Launching for #WEFBiosolids



WEF is pleased to offer the mobile-friendly online *WEF Residuals and Biosolids My Show Planner*.

Set up your My Show Planner account to begin saving your favorite sessions, speakers, exhibitors, and sponsors to your plan and receiving recommendations.

Scan the QR code to download “*Residuals and Biosolids*” now from the Google Play OR App Store. All other web-enabled devices can access the app via the web: rb22.mapyourshow.com.

ONLINE PROCEEDINGS

Conference proceedings consisting of manuscripts from all of the technical presentations have been made available through an online portal. Advance registrants will receive an email with instructions on how to access to the Residuals and Biosolids Conference 2022 online proceedings before the start of the conference. Onsite registrants will receive an email with instructions to access proceedings following the event’s conclusion.

Not attending this year’s Conference? Copies of proceedings may be ordered on Access Water after the conference ends. You may call 1-800-666-0206 or visit www.AccessWater.org to place your order.

GET INVOLVED WITH WEF

The Water Environment Federation offers many ways to get engaged, build a network, and improve your skills as a water professional. See below for just a few examples.

Become a WEF Member

WEF is your access to water knowledge and invaluable networking opportunities with more than 30,000 professionals and thought leaders in water quality. For more information about membership categories, pricing, and member benefits, visit www.wef.org/membership/join-wef.

Join a WEF Committee

More than 2,500 WEF members participate in WEF committee activities, developing conference programs, writing technical manuals and books, developing training materials and program content, and many other WEF program activities. Committees include Collection Systems, Public Communications and Outreach, and more! To learn more about joining a committee, visit www.wef.org/committees. WEF membership is required to participate.

Submit to Water Environment Research

Published since 1928, Water Environment Research (WER) is an international multidisciplinary water resource management journal for the dissemination of fundamental and applied research in all scientific and technical areas related to water quality and resource recovery. In addition to original research articles, short communications, case studies, reviews, and perspectives are encouraged.

Continue your Education Online

In addition to in-person conferences, WEF also offers a variety of technical and leadership courses online. Through the WEF Learning Center, members and non-members can sign up to join webcasts, online courses, and virtual workshops. Visit <https://learn.wef.org> for more information. In addition, WEF also offers a blending learning program called the Water Leadership Institute which brings together water professionals from around the US, Canada, and world. Learn more at www.wef.org/wli.

Attend WEFTEC

WEFTEC is WEF's largest and most comprehensive conference, featuring dozens of technical sessions, a massive exhibit hall, and plenty of networking opportunities. WEFTEC 2022 will be held October 8-12, 2022 in New Orleans, Louisiana. More information can be found at www.weftec.org.

SPONSORS

We would like to thank the following sponsoring companies for their contributions to the conference and program.

374WATER^o

www.374water.com

Silver

Booth: 523



www.garverusa.com/markets/water

Iridium



www.hdrinc.com

Bronze Elite

SPONSORS

We would like to thank the following sponsoring companies for their contributions to the conference and program.



www.brownandcaldwell.com
Networking Luncheon - Wednesday



www.denaliwater.com
Networking Break
Booth: 216



www.hazenandsawyer.com
Phone Charging Station



WASTE WATER Solutions
www.huber-technology.com
Lanyard
Booth: 503



www.insinkerator.com
Opening General Session



www.nefcobiosolids.com
Conference Program Ad
Booth: 324



An Ovivo Division

www.varec-biogas.com
Tote Bag

SPONSORS

We would like to thank the following sponsoring companies for their contributions to the conference and program.

*Networking Reception
Hosted by the RBC Young Professionals
Subcommittee, with generous donations from:*



www.chopperpumps.com
Booth: 310



www.huber-technology.com
Booth: 503



www.celcertifications.com

Play Bingo!

**During the Networking Reception, visit the
RBC Young Professionals Subcommittee in booth 531
for a Bingo card.
Multiple chances to win!**

SESSIONS AT A GLANCE

Session Number	Session Title	Start Time	End Time	CE Credits
Tuesday, May 24				
Workshop B	Increasing Biosolids Value & Enhancing Quality	1:30 p.m.	5:00 p.m.	0.3 CEUs
Workshop C	Seeking the Skinny on Sludge - MOP-8 Solids Stabilization Fundamentals	8:30 a.m.	5:00 p.m.	0.6 CEUs
Workshop D	Dewatering Optimization Workshop – Practical Ways to Improve Performance	8:30 a.m.	5:00 p.m.	0.6 CEUs
Wednesday, May 25				
OGS	Opening General Session	8:30 a.m.	11:45 a.m.	3.0 GCHs
Session 01	WRF Research Highlights: New Discoveries and Tools to Support Your Co-Digestion Program	1:30 p.m.	4:45 p.m.	2.5 PDHs
Session 02	Executing Biosolids Strategies in a Changing World	1:30 p.m.	4:45 p.m.	2.5 PDHs
Session 03	Biosolids and PFAS	1:30 p.m.	4:45 p.m.	2.5 PDHs
Session 04	Heat Drying Considerations	1:30 p.m.	3:00 p.m.	1.5 PDHs
Session 05	Considering Diversity, Equity and Inclusion as a Factor in Project Planning and Implementation	3:45 p.m.	4:45 p.m.	1.0 PDH
Thursday, May 26				
Tour	City of Columbus Southerly Wastewater Treatment Plant and Compost Facility Tour	8:00 a.m.	11:00 a.m.	3.0 GCHs
Session 06	Advanced Thermal Processes: Recent Developments and Implementations	8:30 a.m.	11:45 a.m.	2.5 PDHs
Session 07	Co-Digestion	8:30 a.m.	10:00 a.m.	1.5 PDHs
Session 08	Economics and Project Delivery	8:30 a.m.	11:45 a.m.	2.5 PDHs
Session 09	Ohio Solids Management	8:30 a.m.	10:00 a.m.	1.5 PDHs
Session 10	Beyond Nutrients: Holistic Perspectives on Biosolids Benefits	10:45 a.m.	11:45 a.m.	1 PDH
Session 11	Hot Topics	10:45 a.m.	11:45 a.m.	1 PDH
	Technology Spotlight	12:30 p.m.	1:45 p.m.	1.0 GCH
Session 12	Thermal Hydrolysis Processes	1:30 p.m.	4:45 p.m.	2.5 PDHs
Session 13	Current and Future Regulatory Trends and Their Impact on Biosolids Programs	1:30 p.m.	4:45 p.m.	2.5 PDHs
Session 14	Research and Innovation	1:30 p.m.	4:45 p.m.	2.5 PDHs
Session 15	Realizing Biosolids Benefits - Case Studies in Master Planning and Land Application	1:30 p.m.	4:45 p.m.	2.5 PDHs

SESSIONS AT A GLANCE

Session Number	Session Title	Start Time	End Time	CE Credits
Friday, May 27				
Session 16	Thickening & Dewatering	8:30 a.m.	10:00 a.m.	1.5 PDHs
Session 17	Current Factors in Biosolids Markets	8:30 a.m.	11:15 a.m.	2.5 PDHs
Session 18	Biosolids to Energy - How Technologies can Convert Biosolids to a Renewable Energy Source	8:30 a.m.	11:15 a.m.	2.5 PDHs
Session 19	Digestion and Stability	8:30 a.m.	11:15 a.m.	2.5 PDHs
Session 20	Leaving Landfills - Discussing the Future of Organics Management	10:15 a.m.	11:15 a.m.	1.0 PDH

PRE-CONFERENCE WORKSHOPS

(Additional fees required)

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

Tuesday, May 24, 2022

8:30 a.m. – 12:00 p.m.

WORKSHOP A HAS BEEN CANCELED

Workshop B: Increasing Biosolids Value & Enhancing Quality

Tuesday, May 24, 2022

Room A 113 – A 115

1:30 p.m. – 5:00 p.m.

0.3 CEUs

1:30 p.m. Introduction

Maile Lono-Batura, Water Environment Federation

**1:40 p.m. Biosolids to Market Case Study & Research Showcase
Interactive Q&A and Biosolids: Matching Supply and Demand**

Chris Peot, DC Water; Karri Ving, San Francisco Public Utilities Commission

**2:30 p.m. Biosolids to Market: What Values/Devalues Products
Interactive Q&A**

Ron Alexander, R. Alexander Associates

3:00 p.m. Break

3:15 p.m. Product Show & Tell

Ron Alexander, R. Alexander Associates

3:45 p.m. Certification Case Study

Ron Alexander, R. Alexander Associates

4:05 p.m. Certification Think Tank Facilitated Dialogue

Maile Lono-Batura, Water Environment Federation; Ron Alexander, R. Alexander Associates

4:50 p.m. Closing Thoughts

Maile Lono-Batura, Water Environment Federation

5:00 p.m. Workshop adjourns

PRE-CONFERENCE WORKSHOPS

(Additional fees required)

Workshop C: Seeking the Skinny on Sludge - MOP-8 Solids Stabilization Fundamentals

Tuesday, May 24, 2022

Room A 120 – A 122

8:30 a.m. – 5:00 p.m.

0.6 CEUs

8:30 a.m. Welcome and Introduction
Jeff Coyne, Hazen and Sawyer

8:40 a.m. Where Do Biosolids Come From?
Jeff Coyne, Hazen and Sawyer

8:50 a.m. What's Up? -Stream and Downstream of the Stabilization Process
Matt Williams, WesTech

9:00 a.m. Anaerobic Digestion Process Fundamentals
Chris Muller, Brown and Caldwell

10:00 a.m. Break

10:30 a.m. Enhanced Anaerobic Digestion and Thermal Hydrolysis
Stephanie Spalding, HDR

11:00 a.m. Anaerobic Digestion Process Design
Michael Bullard, Hazen and Sawyer

11:30 a.m. Anaerobic Digestion Design Challenge

12:00 p.m. Lunch

1:30 p.m. Anaerobic Digestion
Paul Bizer, Barge Design

2:30 p.m. Anaerobic Digestion Design Challenge

3:00 p.m. Break

3:30 p.m. Composting Fundamentals and Design
Todd Williams, Jacobs

4:15 p.m. Composting Design Challenge

4:45 p.m. Conclusion
Matt Williams, WesTech

5:00 p.m. Workshop adjourns

PRE-CONFERENCE WORKSHOPS

(Additional fees required)

Workshop D: Dewatering Optimization Workshop – Practical Ways to Improve Performance

Tuesday, May 24, 2022

Room A 123 – A 125

8:30 a.m. – 5:00 p.m.

0.6 CEUs

8:30 a.m. Introduction

David Oerke, Jacobs, WEF Solids Separation Subcommittee

8:40 a.m. Goals for Workshop, Collect Attendee Dewatering Challenges and Questions

Stephanie Spalding, HDR

9:10 a.m. Fundamental Flocculation Properties and Dewatering/WEF Research Study

Matt Higgins, Bucknell University

10:00 a.m. Break

10:30 a.m. Dewatering Equipment Basics – How does it work?

Dan Fronhofer, BDP Industries

10:45 a.m. Mechanical Optimization of Dewatering Equipment

Adam Parmenter, HDR

11:15 a.m. Interactive Breakout Session Discussion from Operators: What has Worked, Lessons Learned, and Report Back

12:00 p.m. Lunch

1:30 p.m. Dewatering Optimization – Practical Ways to Improve Performance by Laboratory Testing

Peter Zhao, SNF Polydyne

2:00 p.m. Design Considerations of Dewatered Solids Conveyance Options

David Oerke, Zwelani Ngwenya, Jacobs

2:30 p.m. Dewatering Equipment Selection for and Sludge Characteristics Study

Shaun Hurst, Andritz

Workshop D agenda continued on following page

PRE-CONFERENCE WORKSHOPS

(Additional fees required)

Workshop D agenda continued from previous page

- | | |
|------------------|---|
| 3:00 p.m. | Break |
| 3:30 p.m. | Successful Dewatering Optimization Completed by a Utility
Mike Gates, Chris Maher, Clean Water Services |
| 4:00 p.m. | Panel Discussion |
| 4:30 p.m. | Conclude |
| 5:00 p.m. | Workshop Adjourns |

OPENING GENERAL SESSION

Opening General Session

Wednesday, May 25

8:30 a.m. – 11:45 a.m.

Room: A 210 – A 215

3.0 GCHs

- 8:30 a.m. **Welcome and Introductions**
Kathryn Crestani, NEORSD, Conference Co-Chair
Jason Tincu, Greene County, Conference Co-Chair
- 8:40 a.m. **WEF Welcome**
Jamie Eichenberger, WEF Board of Trustees
- 8:50 a.m. **OWEA Welcome**
Jason Tincu, Greene County, Conference Co-Chair
- 8:55 a.m. **The Science and Business of Turning Waste into Wealth & Health**
Lina Zeldovich, Author of *The Other Dark Matter*
- 9:30 a.m. **Biosolids: A Solution for Soil Health and Sustainability**
Nick Basta, Ohio State University
- 10:00 a.m. **Networking Break and Book Signing by Lina Zeldovich in Exhibit Hall**
- 10:45 a.m. **Are We PFASed?**
Ned Beecher, NEBRA
- 11:15 a.m. **State of Biosolids in Ohio**
Jamie Gellner, Hazen and Sawyer
- 11:45 a.m. **Session Adjourns for Luncheon in Exhibit Hall**

TECHNICAL SESSIONS

Session 01: WRF Research Highlights: New Discoveries and Tools to Support Your Co-Digestion Program
Wednesday, May 25, 2022 **Room: A 210 – A 212**
1:30 p.m. – 4:45 p.m **2.5 PDHs**

Coordinator: Stephanie Fevig, Water Research Foundation

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 for Networking Reception in Exhibit Hall**

TECHNICAL SESSIONS

Session 02: Executing Biosolids Strategies in a Changing World
Wednesday, May 25, 2022 **Room: A 113 – A115**
1:30 p.m. – 4:45 p.m. **2.5 PDHs**

Moderators: James Dunbar, Lystek International; Jeffrey LeBlanc, Denali Water Solutions

1:30 p.m. NEOM Biosolids Strategy

Richard Lancaster, Ross Wilson, Andrea Poole, Raj Chavan, Atkins; Lamees Alkhamis, Ala'a Ragab, Adil Farooq, Nicholas Burnett, NEOM

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, 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, Hazen and Sawyer; James Howard, Chris Saunders, Charles Portner, Anne Arundel County DPW

3:00 p.m. Networking Break

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

Jacob Metch, Michael Falk, HDR, Inc; Melanie Murphy, Samantha O'Connor, Philadelphia Water Department; Nicole Brown, AECOM

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, Juan Pablo Vicuna-Reyes, Pablo Rincon, Fernando Sarmiento, Greeley and Hansen; Galo Durazno Orellana, ETAPA EP

4:45 p.m. Session Adjourns for Networking Reception in Exhibit Hall

TECHNICAL SESSIONS

Session 03: Biosolids and PFAS

Wednesday, May 25, 2022

1:30 p.m. – 4:45 p.m.

Room: A 120 – A122

2.5 PDHs

Moderators: Manuel Moncholi, Stantec; Rusty Schroedel, AECOM

1:30 p.m. Statewide PFAS Assessment of WWTPs and Biosolids in Michigan

Dorin Bogdan, Christopher Curran, Charles Goss, AECOM

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, Andrew Friedenthal, CHAR Technologies

3:45 p.m. Eliminating PFAS - Bioforcetech Technology Shows Promise through EPA Testing

Valentino Villa, Elizabeth Bridges, Garrett Benisch, 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, GLWA

4:45 p.m. Session Adjourns for Networking Reception in Exhibit Hall

TECHNICAL SESSIONS

Session 04: Heat Drying Considerations

Wednesday, May 25, 2022

Room: A 123 – A 125

1:30 p.m. - 3:00 p.m.

1.5 PDHs

Moderators: James Hanson, GEA Westfalia Separator; Anna Munson, Hazen and Sawyer

1:30 p.m. Milorganite Operational Risk Register Market Assessment

Lisa Challenger, Kathleen Bertoldi, 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, Alan Bowling, Edward McCallum, Hazen and Sawyer; Hollis Terry, Michael Hughes, Athens-Clarke County PUD

2:30 p.m. Harnessing the Power of Dried Biosolids - A Decade of Experience

Charles Goss, AECOM; Ray Wurm, City of Buffalo, MN; Sudhakar Viswanathan, Veolia Water Technologies

3:00 p.m. Session Adjourns for Networking Break in Exhibit Hall

TECHNICAL SESSIONS

Session 05: Considering Diversity, Equity and Inclusion (DE&I) as a Factor in Project Planning and Implementation

Wednesday, May 25, 2022

Room: A 123 – A 125

3:45 p.m. – 4:45 p.m.

1.0 PDHs

Moderator: Natalie Sierra, Brown and Caldwell

Have you ever thought about the impacts to DE&I as they relate to decision-making of public utilities including those within the Biosolids space? Come join us for a thought-provoking roundtable discussion with industry leaders from across sector aimed at evaluating DE&I as it relates to public utility and biosolids management. Can we (and should we) do a better job considering DE&I? What steps do we need to take to better represent our diverse demographics?

4:45 p.m. Session Adjourns for Networking Reception in Exhibit Hall

FACILITY TOUR

(Additional fees required)

City of Columbus Southerly Wastewater Treatment Plant and Compost Facility Tour

Thursday, May 26, 2022

8:00 a.m. – 11:00 a.m.

3.0 GCHs

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 bio-solids 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.

TECHNICAL SESSIONS

Session 07: Co-Digestion

Thursday, May 26, 2022

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

Room: A 113 – A 115

1.5 PDHs

Moderators: Erik Larsen, Vaughan; Bipin Pathak, DC Water

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, Michelle Young, Bruce Rittmann, Swette Center for Environmental Biotechnology, Arizona State University

9:30 a.m. Using Mathematical Modeling to Identify Causes of Souring During Food Waste Anaerobic Co-Digestion
Michelle Young, Arizona State University; Ye Ji, Harbin Institute of Technology; Bruce Rittmann, Arizona State University

10:00 a.m. Session Adjourns for Networking Break in Exhibit Hall

TECHNICAL SESSIONS

Session 08: Economics and Project Delivery

Thursday, May 26, 2022

Room: A 120 – A122

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

2.5 PDHs

Moderators: Matthew Jalbert, Trinity Water Authority of Texas; Ahmad Laban, MWRD of Greater Chicago

8:30 a.m. Policy Outlook Informs Sensitivity Analyses of Biogas Alternatives

Becky Luna, Carollo Engineers; Blair Wisdom, Arsby Norford, Metro Wastewater Reclamation District; David Pier, Carollo Engineers

9:00 a.m. Monte Carlo Modeling Approach for Anaerobic Digestion and Biogas Utilization

Laurel Schach, 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

10:00 a.m. Networking Break

10:45 a.m. Test Drive Before You Buy: Making Data-driven Life Cycle Cost Decisions

Jeff Rose, City of Chattanooga; Nicole Stephens, Stephanie Kopec, Harold Schmidt, Michael McWhirter, Manuel Moncholi, Stantec

11:15 a.m. Gas to Grid - Virginia's First RNG Injection Facility

DJ Wacker, RK&K; Becky Luna, Carollo Engineers; Dana Hargrove, Terri Love, Western Virginia Water Authority; Paul Bassette, Carollo Engineers

Alternate: Biosolids Cake Pumping Life Cycle Analysis - A True Operators Story

Joshua Divalentino, Schwing Bioset; Jeff Prevatt, Houssam El Jerdi, Pima County; Dean Moulis; Franz Tillman, Eric Wanstrom, Schwing Bioset

11:45 a.m. Session Adjourns for Networking Luncheon in Exhibit Hall

TECHNICAL SESSIONS

Session 09: Ohio Solids Management

Thursday, May 26, 2022

Room: A 123 – A 125

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

1.5 PDHs

Moderators: Lisa Challenger, Material Matters; Lloyd Winchell, Brown and Caldwell

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

Dawn Taylor, KWH Water Reclamation Facility; William Barber, Ashish Sahu, Paul Christy, Farbod Dadgar, Cambi

9:00 a.m. Optimizing Fluid Bed Combustion

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; William Horst, Montgomery County Environmental Services; Chris Brausch, Warren County Water and Sewer Department; Scott Reed, 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 for Networking Break in Exhibit Hall

TECHNICAL SESSIONS

Session 10: Beyond Nutrients: Holistic Perspectives on Biosolids Benefits

Thursday, May 26, 2022
10:45 a.m. – 11:45 a.m.

Room: A 110 – A 112
1.0 PDH

Moderator: Greg Kester, CA Association of Sanitation Agencies

Panelists: Lynne Moss, Black and Veatch; Nick Basta, Ohio State University; Ned Beecher, North East Biosolids & Residuals Association; Andrew Carpenter, Northern Tilth

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.

Session 11: Hot Topics

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

Room: A 123 – A 125
1.0 PDH

Moderators: Tracy Chouinard, Brown and Caldwell; Dian Zhang, Stantec

10:45 a.m. Getting Ready for Chemical Interruptions at WRRFs
Derya Dursun, Hazen; Reza Sobhani, OCSD; Alexander Gorzalski, Bryce Danker, Sebastien Rossouw, Fred Gerringer, Michelle Chebeir, Lynn Grijalva, Hazen

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 for Networking Luncheon

TECHNOLOGY SPOTLIGHT

Technology Spotlight
Thursday, May 26, 2022
12:30 p.m. – 1:45 p.m.

Exhibit Hall
1.0 GCH

*Please eat lunch first and then come participate. The five exhibitors listed below will each be holding the same 20-minute presentation three times in a row. Participants are invited to join a different presentation at each of the times listed below. Choose the top three you would like to attend. Each presentation happens at the exhibitor's booth. Presentations kickoff concurrently at: **12:35 PM**, **1:00 PM**, and **1:25 PM** in each of the five booths.*

12:30 PM	Mobile Session Introduction at entrance to exhibit hall
12:35 PM	5 Simultaneous Presentation A
1:00 PM	5 Simultaneous Presentation B
1:25 PM	5 Simultaneous Presentation C

Booth 523 **Elimination of PFAS in Wastewater Residuals and Biosolids Using Supercritical Water Oxidation (SCWO)**
Mark Deshusses, *374Water Inc.*

Booth 215 **Dewatering Anaerobically Co-digested Biosolids; Learning from Experience in Scandinavian Countries**
Mathieu Ouellet, *Fournier Industries*

Booth 403 **Laboratory Verification of PFAS Destruction Efficiencies of High Temperature Thermal Oxidation Processes**
Sudhakar Viswanathan, *Veolia Water Technologies*

Booth 205 **Optimizing Polymer Activation: Following the Science**
Yong Kim, *UGSI Solutions*

Booth 409 **Design and Performance Evaluation of Active Solar-Assisted Biosolids Drying with Decentralized Thermal Recovery System**
Alexander Kraemer, *Thermal Process Systems, Inc.*

TECHNICAL SESSIONS

Session 12: Thermal Hydrolysis Processes

Thursday, May 26, 2022

Room: A 110 – A 112

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

2.5 PDHs

Moderators: Erik Larsen, Vaughan; Dawn Taylor, Medina County Sanitary Engineers

1:30 p.m. Effect of Primary and Secondary Sludge Blending on Recalcitrant Nitrogen Formation in Thermal Hydrolysis Pretreatment

Hao Luo, Virginia Tech; Malcolm Taylor, Caroline Nguyen, Washington Suburban Sanitary Commission; Mary Strawn, Lisa Racey, Arlington County Water Pollution Control Bureau; Brian Balchunas, Chris Moline, Lawrence Hentz, HDR Inc; 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, Young-soo Choi, Jae-min Choi, BKT Co. Ltd.; Jon Liberzon, Tomorrow Water

2:30 p.m. Effects of Recalcitrant Nutrient Formation in Thermal Hydrolysis Pretreatment and Anaerobic 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

David Socha, Dian Zhang, Samantha Babbitt, Bryce Swillum, Michael McWhirter, Joe Uglevich, Stantec; Robert Wierzbicki, PC Construction; Matt VanHorne, Hazen; Stanley Dabek, Washington Suburban Sanitary Commission

Session 12 agenda continued on following page

TECHNICAL SESSIONS

Session 12 agenda continued on following page

- 4:15 p.m.** **The Addition of FOG to Thermal Hydrolysis: Experiences of Hampton Roads Sanitation District's Atlantic Treatment Plant**
Christopher Muller, Brown and Caldwell; Christopher Wilson, Hampton Road Sanitation District
- Alternate:** **Getting it Started with Alternative Delivery Approaches to THP**
Amy Hanna, Hazen and Sawyer; Ed Stempien, Raleigh Water; C. Michael Bullard, Hazen and Sawyer; Robert Wierzbicki, PC Construction; Joe Uglevich, Stantec
- 4:45 p.m.** **Session Adjourns**

TECHNICAL SESSIONS

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

Thursday, May 26, 2022

Room: A 113 – A 115

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

2.5 PDHs

Moderators: Gregory Homoki, ARVOS Group; Kelly Valek, NEORS

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

Andrew Silton, 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, Georgia Environmental Finance Authority; Greg Knight, Stephen Simpson, Lynne Moss, Black & Veatch

3:00 p.m. Networking Break

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

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

4:45 p.m. Session Adjourns

TECHNICAL SESSIONS

Session 14: Research and Innovation

Thursday, May 26, 2022

Room: A 120 – A 122

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

2.5 PDHs

Moderators: Chris Harvey, RETTEW Associates; Joseph Marino, Brown and Caldwell

1:30 p.m. **Machine Learning for Dewatering Optimization**
Micah Blate, Katya Bilyk, Derya Dursun, Hazen and Sawyer

2:00 p.m. **The IntensiCarb™ Technology as High-Rate Process for Anaerobic Biosolids Fermentation Intensification and Nutrient Recovery**

Gholamreza Bahreini, Masuduz Zaman, George Nakhla, Western University; Katherine Bell, Christopher Muller, Jose Jimenez, Ahmed Al-Omari, Brown and Caldwell; Domenico Santoro, Eunkyung Jang, John Walton, USP Technologies; Frances Okoye, Farokh Laqa Kakar, Elsayed Elbeshbishy, Ryerson University; Ferenc Hazi, Imre Takacs, Dynamita; Sudhir Murthy, NEWHub Corp; Diego Rosso, University of California, Irvine

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, Ovivo; James Goldhardt, Coombs Hopkins

3:00 p.m. **Networking Break**

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, Evan Heronemus; Kasuni Gamage, Ganga Hettiarachchi, Prathap Parameswaran, Kansas State University

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, GLWA; Michael Thorson, Pacific Northwest National Laboratory; John Norton, GLWA

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

TECHNICAL SESSIONS

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

Thursday, May 26, 2022

Room: A 123 – A 125

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

2.5 PDHs

Moderators: Jim Groman, Ovivo; Natalie Sierra, Brown and Caldwell

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

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

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

Ty Morton, Alejandra Fraijo-Arce, HDR; 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, Tracy Chouinard, Rob Gaylord, Brown and Caldwell

3:00 p.m. Networking Break

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, Guanglong Tian, Olawale Oladeji, Albert Cox, Heng Zhang, Edward Podczerwinski, MWRD of Greater Chicago

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

John Lavery, Mark Teshima, SYLVIS Environmental Services Inc.

Alternate: A Biosolids Land Application Program for All Seasons: Case Study in Northern California

James Dunbar, Jacob Collins, Lystek International Limited

4:45 p.m. Session Adjourns

TECHNICAL SESSIONS

Session 16: Thickenings & Dewatering

Friday, May 27, 2022

Room: A 110 – A 112

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

1.5 PDHs

Moderators: Derya Dursun, Hazen and Sawyer; Bipin Pathak. DC Water

8:30 a.m. Who Will Take the 'Cake'? An Evaluation of Two Emerging Dewatering Preconditioning Technologies

Heidi Bauer, 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 for Networking Break

TECHNICAL SESSIONS

Session 17: Current Factors in Biosolids Markets

Friday, May 27, 2022

Room: A 113 – A 115

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

2.5 PDHs

Moderators: Trudy Johnston, Material Matters; Wick Warden, Allgeier, Martin, and Associates

8:30 a.m. Investigating Alternative Products and Markets to Enhance Capacity and Outlet Diversity 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.

10:00 a.m. Networking Break

10:15 a.m. Realising the Value in our Waste – A Bespoke Resource Recovery Assessment for Thames Water
[Ross Wilson](#), Esme Piechoczek, Richard Lancaster, Sarah-Jane Westlake, 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
Charles Goss, Susan Spore, AECOM; [Jonathan Sandhu](#), Gulf Coast Authority

11:15 a.m. Conference Adjourns

TECHNICAL SESSIONS

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

Friday, May 27, 2022

Room: A 120 – A 122

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

2.5 PDHs

Moderators: Alexander Kraemer, Thermal Process Systems; Jay Surti, Greeley and Hansen

8:30 a.m. Designing Cogeneration Engines to Maximize Energy Efficiency: Focusing on Heat Recovery

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

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, New Water, Green Bay Metro Sewerage Dist

10:00 a.m. Networking Break

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

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

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

Eric Wilgenbusch, Unison Solutions

11:15 a.m. Session Adjourns

TECHNICAL SESSIONS

Session 19: Digestion and Stability

Friday, May 27, 2022

Room: A 123 – A 125

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

2.5 PDHs

Moderators: John Richardson, Garver USA; Jose Velasquez, AE2S

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

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, John Willis, Christopher Muller, Brown and Caldwell; Darin Wise, Tyler Schweinfurth, City of Columbus

9:30 a.m. Linking Anaerobic Digester Microbiomes with Resistance to Organic Overloads

Ashley Berninghaus, Tyler Radniecki, Oregon State University

10:00 a.m. Networking Break

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.

Sanjay Purswani, Anaergia Services LLC; Brian Schumacker, South San Francisco-San Bruno Water Quality Control Plant; Margaret Laub, Andrew Dale, Anaergia Services LLC

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; Ruth Borgmann, Meredith Bridwell, Hazen and Sawyer

Alternate: Optimizing Energy and Nutrient Control with Two-Stage Anaerobic Digestion

Justin Wippo, Richard Pressley, Thermal Process Systems

11:15 a.m. Conference Adjourns

TECHNICAL SESSIONS

Session 20: Leaving Landfills - Discussing the Future of Organics Management

Friday, May 27, 2022

10:15 a.m. - 11:15 a.m.

Room: A 110 – A112

1.0 PDH

Moderator: Erik Larson, Vaughan Company

Panelists: Derya Dursun, Hazen and Sawyer; Renato Contipelli, Quasar Energy Group; Alicia Chakrabarti, East Bay Municipal Utility District; Dan Hagen, Waste Management

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.

11:15 a.m. Conference Adjourns

EXHIBITION INFORMATION

Exhibition Schedule

Wednesday, May 25 **10:00 a.m. – 6:15 p.m. Exhibit Hall Open**
10:00 a.m. – 10:45 a.m. Networking Break
11:45 p.m. – 1:30 p.m. Networking Luncheon
3:00 p.m. – 3:45 p.m. Networking Break
4:45 p.m. – 6:15 p.m. ...Networking Reception

Thursday, May 26 **10:00 a.m. – 3:45 p.m. Exhibit Hall Open**
10:00 a.m. – 10:45 a.m. Networking Break
11:45 p.m. – 1:30 p.m. Networking Luncheon
12:30 p.m. – 1:45 p.m. Technology Spotlight
3:00 p.m. – 3:45 p.m. Networking Break

Children under 18 entering the Exhibition must be accompanied by a parent or guardian at all times. The parent or guardian must obtain a child badge at registration, and assumes all risk and responsibility for the child's safety.

Due to the proprietary nature of the displays, photography of displays and materials is forbidden without exhibitors' express permission.

EXHIBITOR DIRECTORY

As of 5/5/2022

For Company Descriptions, view Exhibitors in the mobile app.

374WATER^o

374Water, Inc **Booth 523**
www.374water.com
3710 Shannon Rd #51877
Durham, NC 27717

Alfa Laval **Booth 532**
www.alfalaval.us
Phone: 866-253-2528
5400 International Trade Dr
Richmond, VA 23231

Alpine Technology, Inc **Booth 517**
www.alpinetechnology.com
Phone: 512-328-5829
1906 Winter Park Rd
Austin, TX 78746

Anaergia, Inc **Booth 536**
www.anaergia.com
Phone: 905-766-3333
4210 S Service Rd
Burlington, ON L7L 4X5
Canada

Andritz Separation, Inc **Booth 219**
www.andritz.com
Phone: 817-465-5611
1010 Commercial Blvd S
Arlington, TX 76001

BCR Environmental **Booth 522**
www.bcrinc.com
Phone: 904-819-9170 x130
4063 Salisbury Rd, Ste 203
Jacksonville, FL 32216

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For Company Descriptions, view Exhibitors in the mobile app.

BDP Industries, Inc Booth 411

www.bdpindustries.com
Phone: 518-695-6851
PO Box 118
Greenwich, NY 12834

Boerger, LLC..... Booth 537

www.boerger.com
Phone: 612-435-7300
2860 Water Tower Pl
Chanhassen, MN 55317

Brown Bear Corporation Booth 516

www.brownbearcorp.com
Phone: 641-322-4220
PO Box 29, 2248 Ave of Industry
Corning, IA 50841

CAMBI, Inc Booth 237

www.cambi.com
Phone: 484-318-8623
279 Great Valley Pkwy
Malvern, PA 19355

CB&I Storage Tank Solutions LLC Booth 227

www.cbi.com
Phone: 815-439-3118
14105 S Rte 59
Plainfield, IL 60544

Charter Machine Company..... Booth 437

www.CharterMachine.com
Phone: 732-425-7489
55 Wester Ave
Metuchen, NJ 08840

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For Company Descriptions, view Exhibitors in the mobile app.

D.R. Cordell & Associates, Inc..... Booth 314
www.cordellmfg.com
Phone: 757-880-1272
95 W Butler Ave
Chalfont, PA 18914



Denali Water Solutions LLC..... Booth 216
www.denaliwater.com
Phone: 315-952-1538
3308 Bernice Ave
Russellville, AR 72802

Flottweg Separation Technology, Inc Booth 423
www.flottweg.com
Phone: 859-448-2300
10700 Toebben Dr
Independence, KY 41051

Fournier Industries, Inc Booth 215
www.fournierdewatering.com
Phone: 418-423-4241
3787 W Frontenac Blvd
Thetford Mines, Quebec G6H 2B5
Canada

GEA Group..... Booth 332
www.gea.com
Phone: 201-767-3900
100 Fairway Ct
Northvale, NJ 07647

Griffin Residuals Booth 211
www.griffinresiduals.com
Phone: 270-485-2680
5872 Hwy 1389
Owensboro, KY 42303

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For Company Descriptions, view Exhibitors in the mobile app.

Gryphon Environmental, Inc **Booth 513**

www.2gryphon.com
Phone: 270-478-1040
838 Industrial Dr
Owensboro, KY 42301

Hayward Gordon ULC **Booth 225**

www.haywardgordon.com
Phone: 937-234-3810
5 Brigden Gate
Halton Hills, ON L7G 0A3
Canada

HML **Booth 530**

www.hml.com
Phone: 765-288-1124
912 W McGalliard Rd
Muncie, IN 47303



WASTE WATER Solutions

HUBER Technology, Inc **Booth 503**

www.huber-technology.com
Phone: 704-990-2053
1009 Airlie Pkwy
Denver, NC 28037

Jim Myers & Sons, Inc **Booth 220**

www.jmsequipment.com
Phone: 704-554-8397
PO Box 38778
Charlotte, NC 28278

KECO PUMP **Booth 228**

www.kecopump.com
Phone: 619-298-3800
PO Box 80308
San Diego, CA 92138

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For Company Descriptions, view Exhibitors in the mobile app.

Kemira Water Solutions..... Booth 431

www.kemira.com
Phone: 678-819-4693
*1000 Parkwood Cir, Ste 500
Atlanta, GA 30339*

Kiewit..... Booth 236

www.kiewit.com/markets/water
Phone: 913-302-8228
*8900 Renner Blvd
Lenexa, KS 66219*

Komline-Sanderson Booth 330

www.komline.com
Phone: 908-234-1000
*12 Holland Ave
Peapack, NJ 07977*

KRAFT POWER CORPORATION Booth 510

www.kraftpower.com
Phone: 330-830-4158
*4039 Millenium Blvd SE
Massillon, OH 44646*

LCI Corporation..... Booth 238

www.lcicorp.com
Phone: 704-741-9099
*4433 Chesapeake Dr
Charlotte, NC 28216*

Lystek International Corp..... Booth 515

www.lystek.com
Phone: 226-444-0186
*125 McGovern Dr, Unit 1
Cambridge, Ontario N3H4R7
Canada*

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Merrell Bros, Inc Booth 523
www.merrellbros.com
Phone: 574-699-7782
8811 W 500 N
Kokomo, IN 46901



NEFCO-New England Fertilizer Company Booth 324
www.nefcobiosolids.com
Phone: 617-773-3131
500 Victory Rd
North Quincy, MA 02171

Neutralox, Inc...... Booth 224
www.neutralox-inc.com
Phone: 312-377-6116
150 N Michigan Ave, 35th Fl
Chicago, IL 60601

Orege Booth 511
www.orege.com
Phone: 864-434-0468
100 Chamisa Rd
Covington, GA 30016

Ovivo USA LLC..... Booth 508
www.ovivowater.com/en
Phone: 801-981-3070
4246 S Riverboat Rd, Ste 300
Salt Lake City, UT 84123

Oxbo International Corp Booth 206
www.oxbo.com
Phone: 608-745-2512
100 Bean St
Clear Lake, WI 54005

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Penn Valley Pump Co, Inc Booth 433

www.pennvalleypump.com

Phone: 215-343-8750

998 Easton Rd

Warrington, PA 18976

Prime Solution Inc..... Booth 509

www.psirotary.com

Phone: 269-694-6666

610 S Platt St

Otsego, MI 49078

Process Wastewater Technologies LLC..... Booth 202

www.pwtech.us

Phone: 410-238-7977

9004 Yellow Brick Rd, Ste D

Rosedale, MD 21237

Putzmeister Booth 233

www.putzmeisteramerica.com

Phone: 262-497-0292

1733 90th St

Sturtevant, WI 53177

RBC Young Professionals Subcommittee..... Booth 531

www.wef.org/WEF_RBC

Phone: 610-650-9900

601 Wythe St

Alexandria, VA 22314

RDPTech, Inc Booth 415

www.RDPTech.com

Phone: 610-650-9900

960 Brook Rd, Unit 8

Conshohocken, PA 19428

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REXA / The Henry P. Thompson Co..... Booth 535

www.rexa.com

Phone: 508-584-1199

4 Manley St

West Bridgewater, MA 02379

Schwing Bioset, Inc Booth 308

www.schwingbioset.com

Phone: 715-247-3433

350 SMC Dr

Somerset, WI 54025

Scicorp International Corporation..... Booth 203

www.SciCorp.net

Phone: 905-829-1749

3300 Ridgeway Dr, Unit 13

Mississauga, ON L5L 5Z9

Canada

Sentrimax Centrifuges (USA), Inc Booth 213

www.sentrimax.com

Phone: 949-606-2147

108 Sentry Dr

Mansfield, TX 76063

SNF Polydyne Booth 529

www.polydyneinc.com

Phone: 912-884-3366

1 Chemical Plant Rd

Riceboro, GA 31323

SUEZ Water Technologies & Solutions Booth 204

www.suezwatertechnologies.com

Phone: 952-988-6186

4636 Somerton Rd

Treose, PA 19053

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For Company Descriptions, view Exhibitors in the mobile app.

Sustainable Generation Booth 231

www.sustainable-generation.com

Phone: 312-315-7416

110 S Poplar St, Ste 400

Wilmington, DE 19801

Synagro Technologies, Inc Booth 302

www.synagro.com

Phone: 610-952-2390

435 Williams Ct, Ste 100

Baltimore, MD 21220

Thermal Process Systems Booth 409

www.thermalprocess.com

Phone: 765-714-7929

3113 Covington St

West Lafayette, IN 47906

Tomorrow Water Booth 209

www.tomorrowwater.com

Phone: 714-578-0676

1225 N Patt St

Anaheim, CA 92801

UGSI Solutions, Inc Booth 205

www.ugsicorp.com

Phone: 724-814-3756

1901 W Garden Rd

Vineland, NJ 08360

Unison Solutions, Inc Booth 429

www.unisonsolutions.com

Phone: 563-585-0967

5451 Chavenelle Rd

Dubuque, IA 52002

Exhibitor Directory Continues on Next Page...

EXHIBITOR DIRECTORY

For Company Descriptions, view Exhibitors in the mobile app.



Vaughan Company, Inc **Booth 310**

www.chopperpumps.com

Phone: 360-249-4042 x227

364 Monte Elma Rd

Montesano, WA 98563

VeloDyne **Booth 528**

www.velodynesystems.com

Phone: 303-530-3298

543 S Pierce Ave

Louisville, CO 80027

Veolia Water Technologies **Booth 403**

www.veoliawatertech.com

Phone: 919-677-8310

4001 Weston Pkwy

Cary, NC 27513

Vogelsang **Booth 512**

www.vogelsangusa.com

Phone: 330-296-3820

PO Box 751, 7966 State Route 44

Ravenna, OH 44266

WesTech Engineering..... **Booth 232**

www.westech-inc.com

Phone: 801-290-1942

3665 SW Temple

Salt Lake City, UT 84115

World Water Works, Inc **Booth 234**

www.worldwaterworks.com

Phone: 800-607-7873

4000 SW 113th St

Oklahoma City, OK 73173

EXHIBITION FLOOR PLAN

LUNCHEON

Boerger, LLC
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REXA / The Henry P. Thompson Co
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RBC Young Professionals
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SNF Polydyne
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Merrell Bros Inc
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Alpine Tech
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Lystek Int'l
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Prime Solution
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HUBER Tech Inc
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Brown Bear 516 RDP Tech Inc

Vogelsang 415

512 BDP Ind Inc

KRAFT POWER 510 411

Ovivo USA 508 Thermal Process 409

Veolia Water Tech 403

CAMBI, Inc.
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GEA Grp 332 Putzmeister 233

Kornline-Sanderson 330 Sustainable Generation 231

NEFCO-New England Fertilizer Co 324 C&S Storage Tank Solutions LLC 227 Hayward Gordon LLC 225

Andritz Separation Inc
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D.R. Cordell 314 Fournier Ind Inc 215

Vaughn Co Inc 310 Sentrimax Centrifuges 213

Griffin Residuals 211

Schwing Bioset 308 Tomorrow Water 209

Synagro Tech Inc 302 UGSI Solutions 205

Scicorp Int'l Corp 203

LCI Corp
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World Water Works, Inc
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Denali Water Solutions LLC

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Process Wastewater Tech LLC
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BREAK STATION

BREAK STATION

ENTRANCE

PRESENTER AND MODERATOR DIRECTORY

Mohammad Abu-Orf

AECOM
Presenter Session 01

Ronald Alexander

R. Alexander
Associates
Presenter Workshop B, Speaker Session 17

Eric Auerbach

Arcadis
Speaker Session 14, Session 18

Bruce Bartel

New Water, Green Bay Metro
Sewerage District
Speaker Session 18

Ashley

Berninghaus
Oregon State University
Speaker Session 19

Kathleen Bertoldi

Material Matters
Speaker Session 04, Session 17

Micah Blate

Hazen and Sawyer
Speaker Session 02, Session 14

Dorin Bogdan

AECOM
Speaker Session 03

Ruth Borgmann

Hazen and Sawyer
Speaker Session 15

C. Michael Bullard

Hazen and Sawyer
Speaker Session 04, Session 19

Janine Burke-Wells

North East Biosolids and Residuals Association
Speaker Session 17

Nicholas Burnett

NEOM
Speaker Session 02

Alicia Chakrabarti

East Bay Municipal Utilities District
Speaker Session 20

Lisa Challenger

Material Matters
Speaker Session 02, Session 17, Moderator Session 09

Tracy Chouinard

Brown and Caldwell
Moderator Session 11, Speaker Session 18

Carolyn Christy

RDP Technologies
Moderator Session 10

Nicole Cohen

Carollo Engineers
Speaker Session 13

Renato Contipelli

quasar energy group
Speaker Session 20

Jeffrey Coyne

Hazen and Sawyer
Coordinator Workshop C

Arvind Damodara Kannan

Kansas State University
Speaker Session 14

Bernadette Drouhard

Black & Veatch
Speaker Session 13

James Dunbar

Lystek
Moderator Session 02, Speaker Session 15

Derya Dursun

Hazen and Sawyer
Speaker Session 11, Session 20, Moderator Session 16

Stephanie Fevig

The Water Research Foundation
Coordinator Session 01

Dante Fiorino

Brown and Caldwell
Speaker Session 19

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**Xavier Fonoll
Almansa**
GLWA
Speaker Session 14

**Alejandra Fraijo
Arce**
HDR
Speaker Session 15

**Andrew
Friedenthal**
CHAR Technologies
Speaker Session 03

Dan Fronhofer
BDP Industries, Inc
*Presenter Workshop
D*

Mike Gates
Clean Water
Services
*Presenter Workshop
D*

Charles Goss
AECOM
Speaker Session 04

Boyd Gregg
Engie
Speaker Session 07

Jim Groman
Ovivo
*Moderator Session
15*

Felipe Gutierrez
CP&Y Inc
Speaker Session 16

Sarah Guzman
Cache
Environmental
Laboratories, P.C.
*Moderator Session
05*

Dan Hagen
Waste Management
Speaker Session 20

Amy Hanna
Hazen
Speaker Session 12

Jim Hanson
GEA Mechanical
Equipment US, Inc.
*Moderator Session
04, Speaker Session
16*

John Harris
GHD
Speaker Session 06

Aaron Harter
Denali Water
Solutions LLC
*Moderator Session
05, Speaker Session
09*

Chris Harvey
RETTEW
Associates
*Moderator Session
14*

Matthew Higgins
Bucknell University
*Presenter Workshop
D*

Gregory Homoki
Senior Consultant
*Moderator Session
13*

Shaun Hurst
Andritz
*Presenter Workshop
D*

**Umme Sharmeen
Hyder**
Ryerson University
Speaker Session 16

Rafael Iboleon
Dr Virginia Tech
CEE Department -
Occoquan
Laboratory
Speaker Session 12

Matthew Jalbert
Trinity River
Authority of Texas
*Moderator Session
08*

Trudy Johnston
Material Matters
*Moderator Session
17*

Greg Kester
CA Association of
Sanitation Agencies
*Moderator Session
10*

Alexander Kraemer
*Moderator Session
06, Session 18*

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Ahmad Laban
MWRD of Greater
Chicago
*Moderator Session
08*

Rick Lancaster
Atkins
Speaker Session 02

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Vaughan
*Moderator Session
07, Session 12*

Margaret Laub
Anaergia Services
LLC
Speaker Session 19

John Lavery
SYLVIS
Environmental
Services
Speaker Session 15

Jeffrey LeBlanc
Denali Water
Solutions, LLC
*Moderator Session
02*

F. Michael Lewis
F Michael Lewis Inc
Speaker Session 06

Jon Liberzon
Tomorrow Water
Speaker Session 12

Maile Lono-Batura
Water Environment
Federation
*Coordinator
Workshop B*

Becky Luna
Carollo Engineers
Speaker Session 08

Hao Luo
Virginia Tech
Speaker Session 12

Chris Maher
Clean Water
Services
*Presenter Workshop
D*

Joseph Marino
Brown and Caldwell
*Moderator Session
14*

Timothy McCann
AECOM
Speaker Session 18

Patrick McNamara
Black & Veatch
Speaker Session 03

**Nicholas Merchant-
Wells**
Northeast Ohio
Regional Sewer
District
Speaker Session 09

Jacob Metch
HDR
Speaker Session 02

Manuel Moncholi
Stantec
*Moderator Session
03*

Dave Mooney
Ecoremedy
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Ben Morgan
MWRDGC
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Black & Veatch
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10*

Christopher Muller
Brown and Caldwell
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Session 14*

Anna Munson
Hazen and Sawyer
*Moderator Session
04, Speaker Session
08*

Zwelani Ngwenya
Jacobs
*Presenter Workshop
D, Speaker Session
16*

David Oerke
Jacobs
*Coordinator
Workshop D*

Adam Parmenter
HDR Engineering
Inc
*Presenter Workshop
D*

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David Parry
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Bipin Pathak
DC Water
*Moderator Session
07, Session 16*

Chris Peot
DC Water
*Presenter Workshop
B*

Smith Pittman
Swette Center for
Environmental
Biotechnology
Speaker Session 07

**Ganesh
Rajagopalan**
AECOM
Presenter Session

**Tanja Rauch-
Williams**
Carollo Engineers
*Presenter Session
01*

Scott Reed
Black & Veatch
Speaker Session 09

John Richardson
Garver USA
*Moderator Session
19*

Mary Lou Romero
Brown and Caldwell
Speaker Session 06

Jonathan Sandhu
Gulf Coast Authority
Speaker Session 17

Erin Sandos
South Platte Water
Renewal Partners
Speaker Session 02

Laurel Schaich
CDM Smith
Speaker Session 08

Ralph Schroedel
AECOM
*Moderator Session
03*

**Geoffrey
Schweinfurth**
City of Columbus
Department of
Public Utilities
Speaker Session 19

John Sheets
CDM Smith
Speaker Session 11

Natalie Sierra
Brown and Caldwell
*Moderator Session
15*

Andrew Silton
Beveridge &
Diamond PC
Speaker Session 13

David Socha
Stantec
Speaker Session 12

Stephanie Spalding
HDR Engineering
*Presenter Workshop
D*

Nicole Stephens
Stantec
Speaker Session 08

Mary Strawn
Arlington County
Water Pollution
Control Bureau
Speaker Session 13

Jay Surti
Greeley & Hansen
*Speaker Session 02,
Moderator Session
18*

Jeremy Taylor
SoMax Circular
Solutions
Speaker Session 06

Dawn Taylor
KWH Water
Reclamation Facility
*Speaker Session 09,
Moderator Session
12*

Jason Tincu
Greene County
Sanitary Engineering
Dept
Speaker Session 09

Richard Tsang
CDM Smith
*Moderator Session
06*

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Kelly Valek
NEORSD
Moderator Session
13

Jose Velazquez
AE2S
Moderator Session
19

Valentino Villa
Bioforcetech
Corporation
Speaker Session 03,
Session 06

Karri Ving
San Francisco
Public Utilities
Commission
Presenter Workshop
B

DJ Wacker
RK&K
Speaker Session 08

Eric Wanstrom
Schwing Bioset
Speaker Session 08

Eric Wilgenbusch
Unison Solutions,
Inc.
Speaker Session 18

John Willis
Brown and Caldwell
Speaker Session 13,
Session 15, Session
19

Ross Wilson
Atkins
Speaker Session 17

Lloyd Winchell
Brown and Caldwell
Speaker Session 03,
Moderator Session
09

Justin Wippo
Thermal Process
Systems
Speaker Session 19

Darin Wise
City of Columbus
Department of
Public Utilities
Speaker Session 19

Michelle Young
Arizona State
University
Speaker Session 07

Dian Zhang
Stantec
Moderator Session
11

CONFERENCE SCHEDULE-AT-A-GLANCE

Tuesday, May 24

7:30 a.m. – 5:00 p.m.	Registration
8:30 a.m. – 5:00 p.m.	Workshop C: Seeking the Skinny on Sludge: MOP-8 Stabilization Fundamentals
8:30 a.m. – 5:00 p.m.	Workshop D: Dewatering Optimization Workshop - Practical Ways to Improve Performance
1:30 p.m. – 5:00 p.m.	Workshop B: Increasing Biosolids Value & Enhancing Quality

Wednesday, May 25

7:30 a.m. – 5:00 p.m.	Registration
8:30 a.m. – 11:45 a.m.	Opening General Session
10:00 a.m. – 6:15 p.m.	Exhibit Hall Hours
11:45 a.m. – 1:30 p.m.	Networking Luncheon
1:30 p.m. – 4:45 p.m.	Technical Sessions 1, 2, 3
1:30 p.m. – 3:00 p.m.	Technical Session 4
3:45 p.m. – 4:45 p.m.	Technical Session 5
4:45 p.m. – 6:15 p.m.	Networking Reception

Thursday, May 26

8:00 a.m. – 5:00 p.m.	Registration
8:00 a.m. – 11:00 a.m.	Facility Tour
8:30 a.m. – 11:45 a.m.	Technical Session 6, 8
8:30 a.m. – 10:00 a.m.	Technical Sessions 7, 9
10:00 a.m. – 3:45 p.m.	Exhibit Hall Hours
10:45 a.m. – 11:45 a.m.	Technical Sessions 10, 11
11:45 a.m. – 1:30 p.m.	Networking Luncheon
12:30 p.m. – 1:45 p.m.	Technology Spotlight
1:30 p.m. – 4:45 p.m.	Technical Sessions 12, 13, 14, 15

Friday, May 27

8:00 a.m. – 11:45 a.m.	Registration
8:30 a.m. – 10:00 a.m.	Technical Session 16
8:30 a.m. – 11:15 a.m.	Technical Sessions 17, 18, 19
10:15 a.m. – 11:15 a.m.	Technical Session 20
11:15 a.m.	Conference Adjourns

UPCOMING WEF EDUCATION & TRAINING EVENTS

Innovations in Process Engineering Conference

June 20-23, 2022

Miami, Florida

www.wef.org/processengineering

Stormwater Summit

June 27-29, 2022

Minneapolis, Minnesota

www.wef.org/stormwatersummit

WEFTEC

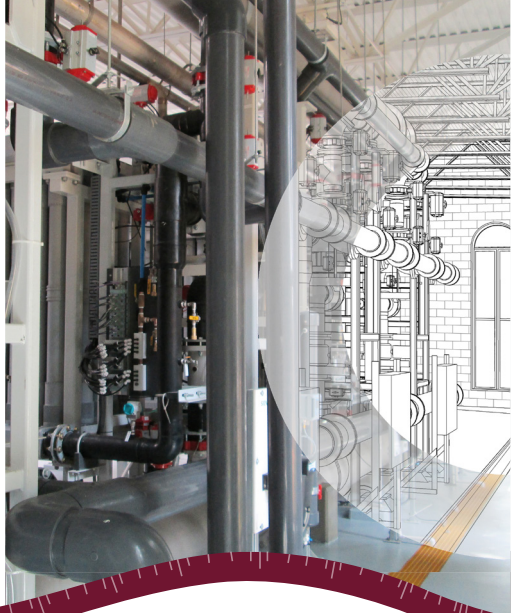
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NOTES

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