

Residuals and Biosolids 2013 Conference

May 5 – 8, 2013
Nashville, Tennessee
Nashville Convention Center



OPENING GENERAL SESSION

Monday, May 6, 2013 8:30am - 12:00pm

The Residuals and Biosolids Conference 2013 Opening General Session will take place on the morning of Monday May 6 at 8:30am. Further details will be provided in the coming weeks!

Session 1: Advances in Stabilization Technologies

Monday, May 6, 2013 1:30pm – 4:45pm

Moderators: Greg Woodward, Stantec

Roy Smith, Guthrie Sales & Service, Inc.

RB1A 1:30pm San Francisco Seguencing Batch Reactor Temperature Phased

Anaerobic Digestion: Efficient Adaptation to Class A Biosolids

Drury D. Whitlock, David W. Green, CH2M HILL; Bonnie M.

Jones, San Francisco Public Utilities Commission; Alexandre Miot, San Francisco Public Utilities Commission; Tim L. Bauer, Douglas Barber,

CH2M HILL

RB1B 2:00pm Achieving Biogas Generation and Minimized Sludge Production

Using a High-Rate Anaerobic Sidestream Reactor (ASSR) Process -

Pilot Study

Chul Park, Dong-Hyun Chon, Chris Watt, Aaron Brennan, UMass

Amherst

RB1C 2:30pm Assessment of Methane Production during Marine Transportation

of Wastewater Solids

Christopher A. Wilson, Greeley and Hansen

3:00pm Networking Break

RB1D 3:45pm Upgraded Digester Mixing: Achieving Sludge Minimization while

Renewing a Key Asset

Rebecca Schaefer, Christopher A. Wilson, Joe M. Gorgan, Greeley and

Hansen

RB1E 4:15pm Fate of Nonylphenol Compounds during Aerobic and Anaerobic

Digestion of Sludge

Dilek F. Sanin, Middle East Technical University; Hande Bozkurt,

S. Omeroglu, METU

Alternate 1 "Second Generation" ATAD Success Stories - "Show Me The Data"-

Several Years Of Performance Data From Two Case Studies Of Conversion

From "First Generation" To "Second Generation" ATAD Systems

David W. Oerke, CH2M HILL; Chad Olsen, McMahon Associates; Jim Kirk, Grand Chute Menasha West Sewerage Commission; Parker Newbanks, Eagle River Water and Sanitation District; Candi Burbridge, Eagle River Water and

Sanitation District; Heidi Bauer, CH2M HILL

Alternate 2 Accelerated Composting Methods and Equipment

Fred Mussari, BCR Environmental.

Session 2: Facilities Operation, Management, and Planning

Monday, May 6, 2013 1:30pm – 4:45pm

Moderators: Bob Forbes, CH2M HILL

Michael Bullard, Hazen and Sawyer

RB2A 1:30pm Economic Methods Matter - Appropriate Analysis Can Overcome the

Biggest Barrier to Biogas Use John L. Willis, Brown & Caldwell

RB2B 2:00pm Making The Case For Sustainable Biosolids Management Solutions:

A Roadmap For Eleven Facilities

Matthew Berg, CH2M HILL; Bruce Cole, North Texas Municipal Utility District; Tiffany Currie, North Texas Municipal Utility District; Jeff Ray, North Texas Municipal Utility District; Ken Wesson, North Texas

Municipal Utility District; Brigit Buff, CH2M HILL; Jenna Covington, CH2M

HILL; Dru Whitlock, CH2M HILL; Todd Williams, CH2M HILL

RB2C 2:30pm To Haul or Not to Haul? Capacity and Class A Biosolids Processing

at the Haifa, Israel Wastewater Treatment Plant

Matthew P. Van Horne, Hazen and Sawyer; C M. Bullard, Hazen and

Sawyer; Yoram Linder, Haifa Association of Towns

3:00pm Networking Break

RB2D 3:45pm Biosolids Processing & Distribution: Challenges Continue

Robert Bates, Louisville Metropolitan Sewer District

RB2E 4:15pm Massachusetts Water Resources Authority Residuals Processing

Facilities: Time for a Re-Examination

John F. Donovan, CDM Smith Inc.; Daniel K. O'Brien, Massachusetts

Water Resources Authority

Alternate 1 Incineration For Solids Processing At Smaller POTWs

James M. Rowan, Black & Veatch; Gustavo Queiroz, Black & Veatch; James

Welp, Black & Veatch; Frank Dachille, Black & Veatch; Charles (Pat)

Schlotzhauer, Black & Veatch

Alternate 2 Squeezed and Burned - Development of a New Solids Processing System

at the Fort Meade Wastewater Treatment Plant

Adam Parmenter, HDR Engineering Inc; Dan Tobocman, , American Water

Military Services Group; Bob Bruner, Bowen Engineering

Session 3: Beneficial Use

Monday, May 6, 2013 1:30pm - 3:00pm

Moderators: Tazio Qubeck, Brown and Caldwell

Trudy Johnson, Material Matters

RB3A 1:30pm Sustainable Solution to the Disposal Epidemic: Beneficial Use of

Water Treatment Residual in Manufactured Topsoil

Jennifer Callahan, Material Matters, Inc.; Trudy Johnston, Material

Matters, Inc.

RB3B 2:00pm Why the Fertilizer Industry Could Use A Little Biosolids

John F. Donovan, CDM Smith Inc.; Jeffrey C. Burnham, VitAg

Corporation

RB3C 2:30pm Over 20 Years of Successful Beneficial Use:Adapting the

Management System Approach: Los Angeles Experience

Diane Gilbert-Jones, City of Los Angeles

Alternate 1 Sewerage Water Board of New Orleans (SWBNO) Incinerator Ash's

Assessment for Usage as a Wetland's Soil Amender

Robert S. Reimers, Tulane University; Yue Xu, Tulane School of Public Health

and Tropical Medicine

Session 4: Conditioning and Dewatering Technologies

Monday, May 6, 2013 1:30pm - 3:00pm

Moderators: Bob Gillette, Carollo Engineers

Jim Smith, Retired

RB4A 1:30pm Evaluation of Electrodewatering for Enhanced Biosolids Dewatering

Aaron Stephens, Material Matters, Inc; Kelly Brenner, Material Matters,

Inc; Dean Minnich, Nazareth Borough Municipal Authority

RB4B 2:00pm High Solids Loading for a DAFT Retrofit for Co-Thickening Operation

Richard T. Kelly, Brown & Caldwell; Dave Newman, Brown and Caldwell; John Bratby, Brown and Caldwell; Mike Patrick, City of Tacoma; Chris

Hatch, City of Tacoma

RB4C 2:30pm Decision Factors on Solids Dewatering Technologies for DC Water's

Biosolids Program

Perry L. Schafer, Brown and Caldwell; Salil Kharkar, DC Water and Sewer Authority; Sudhir Murthy, DC Water and Sewer Authority; Christopher Peot, DC Water and Sewer Authority; Sam Roberts, Brown

and Caldwell; Diala Dandach, Parsons Corporation; Philip Braswell,

Brown and Caldwell

Session 5: Public Support

Monday, May 6, 2013 3:45pm - 4:45pm

Moderator: Steve Wilson, Brown and Caldwell

RB5A 3:45pm Improving Public Communication and Outreach at the METROGRO

Farm

Alicia Gilley, Metro Wastewater Reclamation DistrictKelley Merritt, Metro Wastewater Reclamation District; Bryan Mitchell, Metro Wastewater

Reclamation District

RB5B 4:15pm New Biosolids Technologies And Processes For Developing

Countries

Richard D. Kuchenrither, University of Colorado Boulder; Lori Stone, Black & Veatch; Roger T. Haug, Loyola Marymount University

Session 6: Odor and Pathogen Control

Monday, May 6, 2013 3:45pm – 4:45pm

Moderators: Todd O. Williams, CH2M HILL

Yinan Qi, Black and Veatch

RB6A 3:45pm Potential Sterilization of Biosolids by BioElectroTM Process

Eham T. Safaei, Concordia University; Maria Elektorowicz, Concordia University; Robert S. Reimers, Tulane University; Jan A. Oleszkiewicz,

University of Manitoba

RB6B 4:15pm Treatment of Odor by a Seashell Biofilter

Samantha M. Abraham, UCLA, School of Public Health; Mel Suffet, UCLA

Alternate 1 Sanitary Assurance at Biosolids Composting Facilities: Development of a Temperature Contact Time Test Protocol

Pulat Isobaev, University of Alberta; Kristine Wichuk, University of Alberta; Daryl McCartney, University of Alberta; Norman Neumann, University of Alberta

Session 7: Thermal Processes

Tuesday, May 7, 2013 8:30am – 10:00am

Moderators: Robert Bates, Louisville Metropolitan Sewer District (KY)

Scott Carr, CDM Smith

RB7A 8:30am Thermal Drying to Achieve Class A Biosolids Can Be A Viable

Option For Medium Sized Generators - A Case Study in Bowling

Green, Kentucky

Kristi Schnell, Gresham Smith and Partners

RB7B 9:00am The Duffin Creek Biosolids to Energy Experience - Lessons in

Energy Recovery

Peter Burrowes, CH2M HILL Canada Ltd; Brad Dobson, Regional Municipality of Durham; Euan Ferguson, York Region; Robert

Christopher, CH2M HILL Canada Ltd; Serge Larocque, CH2M HILL

Canada Ltd

RB7C 9:30am A Comparison of Conventional Heating and Microwave Irradiation

for Enhanced Biogas Production from Municipal Biosolids

Seyedeh Neda Mehdizadeh, University of British Columbia- Okanagan; Cigdem Eskicioglu, University of British Columbia-Okanagan; Hanna

Hamid, University of British Columbia-Okanagan

Alternate 1 Meeting the New SSI MACT Regulations - A Case Study

Jay R. Surti, CH2M HILL

Session 8: Success Stories and Lessons Learned

Tuesday, May 7, 2013 8:30am – 11:45am

Moderators: Kevin Colvette, CH2M Hill

David Oerke, CH2M Hill

RB8A 8:30am Rewa Mauldin Road WWTF Cogeneration System: Lessons Learned

From A Fast-track Construction And First-year Operations
Ted Hull, Brown and Caldwell; Calvin Howard, Renewable Water

Resources (Greenville, South Carolina)

RB8B 9:00am Composting Success at Spotsylvania County

Todd O. Williams, CH2M HILL

RB8C 9:30am Speedway, Indiana, WWTP Biosolids Upgrade: Storage

Nitrification/Denitrification Reactor Results in Ammonia Loading

Reduction

Cynthia L. Fort, American Structurepoint Inc; Norman Berry, Town of

Speedway

10:00am Networking Break

RB8D 10:45am Sustainable Biosolids Management in South Florida: Lessons

Learned from the Design, Construction, and Operation a Regional

Biosolids Pelletization Facility Fueled by Landfill Gas

Amber M. Barritt, CDM Smith; Raymond H. Schauer, Solid Waste

Authority of Palm Beach County

RB8E 11:15am How to Make Improvements When The Cupboard is Bare: Energy

Service Contracting

Patricia A. Scanlan, Black & Veatch; Bob Wimmer, Black & Veatch; Tom Appleman, UOSA; Jesse Moffat, FWSA; Pete Thomson, Black & Veatch;

Dennis Clough, ESG; Justin Dickstein, Black & Veatch

Alternate 1 The Shafdan Digestion and Cogeneration Project

David L. Parry, CDM Smith; Scott Vandenburgh, CDM Smith

Alternate 2 PCBs In Biosolids: Monitoring In A Large Urban WWTP Using A Newly

Developed Practical Extraction Procedure

Dilek F. Sanin, METU; Devrim Kaya, METU; Filiz Karakaya, METU; Ipek

Imamoglu, METU

Session 9: Research and Development Activities

Tuesday, May 7, 2013 8:30am – 11:45am

Moderators: John Willis, Brown and Caldwell

David Parry, CDM Smith

RB9A 8:30am Characterization of Thermal Pretreatment Impacts on

Properties of Waste Activated Sludge and Development of a

Pretreatment Model

Gillian R. Burger, University of Waterloo; Wayne J. Parker, University of

Waterloo

RB9B 9:00am Distribution of Alkylphenols and Bisphenol A in Sludge and

Biosolids Between Sludge Treatment Processes

Wale Adewunmi, The State University of New Jersey, Peter F.

Strom, The State University of New Jersey: Daniel Gimenez, The State

University of New Jersey

RB9C 9:30am Simultaneous Sludge Disintegration And Carbon Source Generation

For Enhanced Biological Phosphorous Removal Using Ozonation Devendra P. Saroj, University of Surrey; Adriana Inchauste-Daza, UNESCO-IHE Institute for Water Education: Carlos Lopez-Vazquez.

UNESCO-IHE Institute for Water Education

10:00am Networking Break

RB9D 10:45am The Effect of Common Organic Household Disinfectants Found in

Biosolids on the Potential Function of the Soil Denitrifying Bacteria Paracoccus DenitrificansPD1222 and Sinorhizobium Meliloti 1021
Ryan M. Holzem, Duke University: Claudia Gunsch, Duke University

RB9E 11:15am An Approach to Dewatering Optimization Using UV/Visible

Spectrometry by Monitoring Residual Polymer in Centrate

Banu Ormeci, Carleton University; Fares Almomani, Carleton University; Peter Gallant, ENDETEC/Veolia Water Solutions and Technologies;

Richard DiMassimo, Kruger Inc.; Jeffery Privott, Kruger Inc.

Alternate 1 The Role of Microbially Reducible Iron Flocs and Extracellular Proteases on

the Sludge Reduction in the Cannibal Process

John T. Novak, Virginia Tech; Passkorn Khanthongthip, King Mongkut's Institute of Technology Ladkrabang

Session 10: Bioenergy from Residuals I

Tuesday, May 7, 2013 8:30am – 11:45am

Moderators: Aaron Stephens, Material Matters, Inc.

Dustin Craig, CMD Smith

RB10A 8:30am Pilot Study of Siloxanes Removal from Digester Biogas through

Various Adsorbents

Yuanming Tsai, INFILCO DEGREMONT INC; Sunil Mehta, Infilco

Degremont, Inc; Jordi Raich-Montiu, CETaqua; Charles B. Bott, Hampton Roads Sanitation District; William J. Balzer, Hampton Roads Sanitation

District; Peter A. Burrowes, CH2M HILL

RB10B 9:00am Sometimes Average isn't Good Enough: Understanding the Impact

of Variability on Energy Recovery from Digester Gas

James H. Long, Hazen and Sawyer; Charles M. Bullard, Hazen and Sawyer; Frank Crump, City of Winston-Salem; Chris Shamel, City of

Winston-Salem

RB10C 9:30am Restaurant Trap Waste Characterization and Full Scale FOG Co-

Digestion at the San Francisco Oceanside Plant

Alexandre Miot, San Francisco Public Utilities Commission

10:00am Networking Break

RB10D 10:45am Clean Combustion of Sludge Derived Fuel Part 1 of 2 - Concept to

Pilot

Roger T. Haug, Loyola Marymount University

RB10E 11:15am Clean Combustion of Sludge Derived Fuels: Part 2 of 2

F Michael Lewis, F Michael Lewis Inc.

Alternate 1 Second Law of Thermodynamics Analysis of Resource Recovery from

Wastewater

David L. Parry, CDM Smith

Alternate 2 What Can Solids Do for You? - Shifting towards Solids as an Energy

Resource

Eric Auerbach, Malcolm Pirnie Inc; Thomas E. Kunetz, Metropolitan Water Reclamation District of Greater Chicago; Rob Van Evra, City of Columbus Division of Sewerage and Drainage; James Keller, Buffalo Sewer Authority

Session 11: Legislative, Regulatory, and Legal Issues

Tuesday, May 7, 2013 10:45am – 11:45am

Moderators: Charlie Alix, Stantec

Greg Kester, California Association of Sanitation Agencies

RB11A 10:45am Biosolids 2013: Odors, Nuisance and Current Legal Challenges to

Beneficial Use

James B. Slaughter, Beveridge & Diamond PC

RB11B 11:15am Historical Review of United States (US) Guidance and Regulations

for Sludge Disinfection and Stabilization including a Future

Projection

James E. Smith Jr., Independent Environmental Consultant

Session 12: Collaboration to Advance Energy Sustainability Initiatives

Tuesday, May 7, 2013 1:30pm – 3:00pm

Moderators: Doug Yarosz, Brown and Caldwell

Patricia Scanlan, Black and Veatch

RB12A 1:30pm A National Survey of Biogas Use at Wastewater Treatment Plants in

the United States: The Results

Yinan Qi, Black & Veatch; Ned Beecher, North East Biosolids and Residuals Association (NEBRA); Lori Stone, Black & Veatch

RB12B 2:00pm Road To Energy Neutrality - Werf Is Paving The Way With A Focus

On Biosolids Energy

Ralph Eschborn, AECOM; Paul Kohl, Philadelphia Water Department; Lori Stone, Black and Veatch; Lauren Fillmore, Water Environment

Research Foundation

RB12C 2:30pm Eighteen Agencies Team to Convert Biosolids to Energy for

Regional Solution

Robert A. Gillette, Carollo Engineers; Caroline Quinn, Delta Diablo

Sanitation District; Todd C. Jordan, Carollo Engineers

Alternate 1 North Davis Sewer District's Leadership Path to Net Zero Energy

Phillip E. Heck, Brown & Caldwell; Jim Schettler, Brown and Caldwell; Myron Bachman, North Davis Sewer District; Kevin Cowan, North Davis Sewer District

Session 13: Biosolids Land Application, Land Reclamation, and Nutrient Management

Tuesday, May 7, 2013 1:30pm – 4:45pm

Moderators: Jeffrey J. LeBlanc, WeCare Organics, LLC

Michelle Hatcher, CDM Smith

RB13A 1:30pm Fate and Removal of Steroidal Hormones during Advanced

Anaerobic Digestion of Municipal Biosolids

Hanna Hamid, University of British Columbia; Cigdem Eskicioglu,

University of British Columbia

RB13B 2:00pm Long Term Monitoring Results for the METROGRO© Farm Near Deer

Trail, Colorado

James E. Johnson, Metro Wastewater Reclamation District

RB13C 2:30pm Case Study: Nutrient Trading Options for Satisfying NPDES Cap

Load in the Chesapeake Bay Watershed

Aaron B. Stephens, Material Matters, Inc; Jennifer Callahan, Material

Matters, Inc.

3:00pm Networking Break

RB13D 3:45pm Mine Land Reclamation and Biosolids: A Perfect Match

Trudy Johnston, Material Matters, Inc.; Jennifer Callahan, Material

Matters, Inc.; MIchael Deily, Harrisburg Advanced Wastewater Treatment

Facility

RB13E 4:15pm Too Much Nitrogen?

Dale D. Gabel, CH2M HILL; Dave Meyer, City of Westminster; Tim

Woodard, City of Westminster; Jim Jordahl, CH2M HILL; Thomas Borch,

Colorado State University

Alternate 1 Feasibility Of Combined VFA Production And Phosphorous Recovery For

BNR and Non-BNR Sludge

Francesco Zurzolo, University of Manitoba; Jan A. Oleszkiewicz, University of

Manitoba

Session 14: EPA/NBP/WEF/WERF Future of Biosolids

Tuesday, May 7, 2013 1:30pm - 3:00pm

WEF and WERF have collaborated with CDM Smith, Black & Veatch, CH2M Hill Inc. and Hazen & Sawyer to examine the future of biosolids treatment with specific regard to resource recovery. This new publication, funded by the US EPA, addresses the policy and planning aspects of organics, nutrients, and energy recovery, and examines other resource candidates. The report includes information on the education and outreach challenges and opportunities available to realize a better future. These perspectives will be reviewed and discussed by a select panel of contributors, along with a moderator, concluding with questions and answers from the audience as a means to formally roll out and promote the study.

Session 15: Bioenergy from Residuals II

Tuesday, May 7, 2013 1:30pm – 4:45pm

Moderators: Mohammad (Mo) Abu-Orf, AECOM

Richard Tsang, CDM Smith

RB15A 1:30pm The Tale of Two Digesters: Hydraulic Versus Compressed Biogas

Mixing

Richard W. von Langen, RVL Associates, Inc.; Richard Althouse, Fairfield Suisun Sewer District; Glenn Dorsch, Vaughan Company; Brad Rockwell,

Rockwell Equipment and Engineering, Co.

RB15B 2:00pm Biosolids Mass Reduction to Produce Fuel

William E. Toffey, Effluental Synergies LLC; Cornelius Shields, KORE

Infrastructure LLC; Latif Mahjoob, KORE Infrastructure LLC

RB15C 2:30pm Maximizing Opportunities for Beneficial Use of Biogas for Pima

County, Arizona

Jing Luo, Pima County; Gary Newman, Brown and Caldwell, Inc; Michael Gritzuk, Private Consultant; Eron Jacobson, Brown and Caldwell, Inc; Jerry Bish, Greeley and Hansen, LLC; Fernando Sarmiento, Greeley and

Hansen, LLC; Jackson Jenkins, Pima County

3:00pm Networking Break

RB15D 3:45pm Positive Business Case for Codigestion and Resource Recovery

Facilities in Australia without Pre-Existing Anaerobic Digesters
John Kabouris, CH2M HILL; Tim Shea, CH2M HILL; Kate Simmonds,

CH2M HILL

RB15E 4:15pm Co-thickening and Cogeneration in The Electric City

Vincent Apa, CDM Smith

Alternate 1 An Update to The Island Wide Biosolids Management Plan - A Focus on

Energy and Solids Minimization at Oahu, HI

Charles T. Goss, AECOM; Mohammad Abu-Orf, AECOM; Jeremy Koch, AECOM

Alternate 2 Development, Implementation And Demonstration Of The Co-digestion Of

Source Separated Food Waste By The City Of Tacoma

Christopher Muller, Brown & Caldwell; David McBride, Brown and Caldwell; Donald Stallman, Brown and Caldwell; John Burk, Brown and Caldwell; James Parvey, City of Tacoma, Washington; Lewis Griffith, City of Tacoma, Washington

Session 16: Biosolids Management Approach: A Panel Discussion on Technology Selection Specific to End Use

Tuesday, May 7, 2013 3:45pm – 4:45pm

In this panel discussion, representatives from three utilities will discuss the approaches behind recent updates to their biosolids management programs. Inherently, every utility has a unique combination of evaluation criteria (economic, political, environmental, social, geographical, etc.) that are used to select the chosen technology and ultimate end use of its biosolids. Experience and lessons learned from these utilities and the ensuing discussion are intended to provide insight to those who are contemplating an update to their biosolids management approach. Specific details on panelists will become available in the coming weeks.

Session 17: Why Must We Manage Biosolids as a Nutrient Resource

Tuesday, May 7, 2013 3:45pm – 4:45pm

Supply and demand will dominate the discussion. For over 20 years biosolids have been regulated as a waste. Increasing concern for nutrient management and long term nutrient availability is emerging as the dominant paradigm for emerging programs at all levels. This session will address biosolids as a source essential nutrients to support plant growth and promote soil quality. Comprehensive nutrient management programs are emerging in all efforts promoting land based recycling of societal by-products.

Session 18: Featured Session: Local Metro Water Services Panel

Wednesday, May 8, 2013 8:30am – 11:45am

Additional information on this session's presentations will become available in the coming weeks.