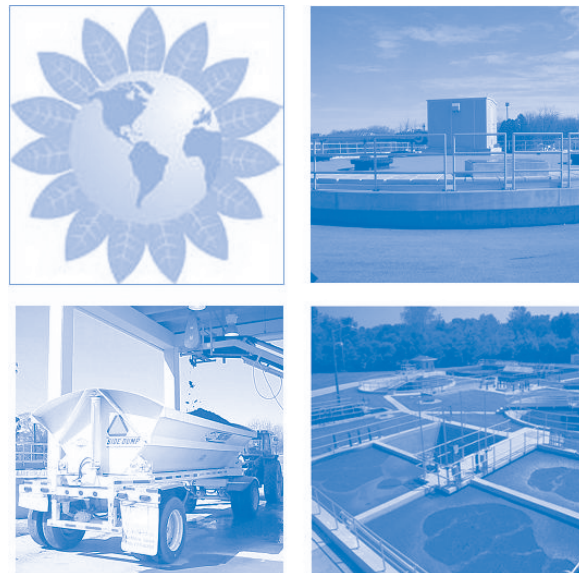


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## 15<sup>th</sup> Annual Central States Water Environment Association Education Seminar

### Managing Biosolids in Our Energy Conscious Era



Presented by  
Central States Water Environment Association



at the  
Monona Terrace Convention Center  
Madison, Wisconsin  
**April 6, 2010**

### Managing Biosolids in Our Energy Conscious Era

Increasing demands for advanced treatment, rising energy costs, emphasis on sustainability, renewable energy, and carbon footprint, and public concerns about biosolids reuse are putting the “squeeze” on biosolids processing and disposal at the dawn of the 21st century. These challenges require critical evaluation and sophisticated operations for biosolids management programs. Plan to attend the 15th Annual Central States Water Environment Association (CSWEA) Education Seminar at the Monona Terrace Convention Center in Madison, WI to hear both internationally recognized and regional experts who will explore current issues related to biosolids management.

#### Who Should Attend?

Wastewater treatment plant managers and operators, process control specialists, designers, regulators, equipment suppliers, and students involved in wastewater treatment. Regulatory agency continuing education contact hours will be awarded.

#### Seminar Location

The seminar will be held at the Monona Terrace Convention Center at One John Nolen Drive, Madison, Wisconsin. This beautiful facility, located on the shore of Lake Monona, was originally designed by Frank Lloyd Wright and opened in 1997. The facility features a theater-style lecture hall and views of Lake Monona and the state capitol. Parking is available at Monona Terrace and adjacent lots as shown on the attached maps.

#### Lodging

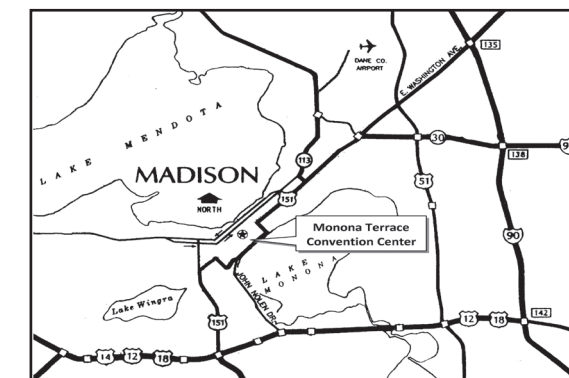
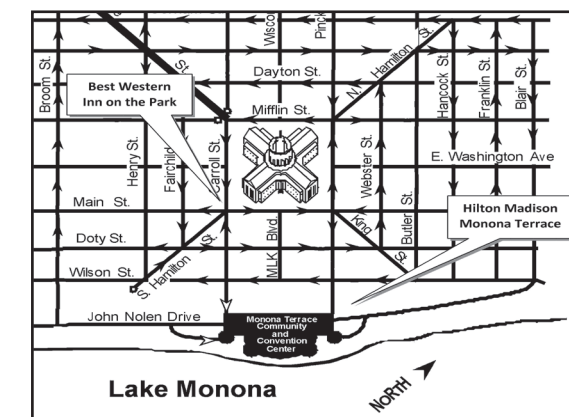
A limited number of rooms are available at the Hilton-Madison (connected to Monona Terrace) located at 9 E. Wilson St., Madison; ph: (608) 255-5100. The rooms have been reserved at conference rates of \$139 per night (plus tax) and will be held until March 5, 2010. For reservations, please call the Hotel toll-free at (866) 403-8838 and indicate your affiliation with the CSWEA Education Seminar. Parking is available at the hotel for \$12 per day or in nearby municipal ramps for a fee.

Additional rooms are available at the Best Western-Inn on the Park (2 blocks from Monona Terrace) located at 22 So. Carroll St., Madison; ph: (608) 285-8000. These rooms are available at a conference rate starting at \$99 per night (plus tax) and will be held until March 5, 2010. For reservations, please call the Inn on the Park toll-free at (800) 279-8811 and indicate your affiliation with the CSWEA Education Seminar. Free parking is available at the Inn on the Park for guests through 5 p.m. April 6, 2010. All rooms will be filled on a first-come, first-served basis.

See the CSWEA web site  
for additional lodging information—  
<http://www.cswea.org>

### CSWEA Education Seminar Committee

<b>Committee Chair</b>	Beth Vogt
<b>Past Chair</b>	Jay Kemp
<b>Technical Program</b>	Scott Fronck (Chair)
	Steve Arant
	William Boyle
	Paige Novak
	Dave Raby
	Daniel Zitomer
<b>Local Arrangements</b>	Matt Allen
<b>Publicity</b>	Bryan Davis
<b>Display Boards</b>	Mike Mereness
<b>Budget</b>	Steve Bollweg
<b>Registration</b>	Anne Lecuyer
	Surabhi Sharma
<b>Brochure</b>	Lyle Zimmerman
<b>Executive Committee</b>	Eric Lecuyer, CSWEA
<b>Coordinator</b>	Executive Director



Central States Water Environment Association, Inc.  
3809 Shenandoah Drive  
Crystal Lake, Illinois 60012

**15th Annual Education Seminar  
Central States Water Environment Association  
Monona Terrace Convention Center**

**Managing Biosolids in  
Our Energy Conscious Era**

**Tuesday, April 6, 2010  
Madison Wisconsin**

**Reception – April 5th**

The Pre-seminar Reception is jointly sponsored by the CSWEA Education Seminar Committee, the Students Committee and Young Professionals (YPs) Committee. All seminar attendees, CSWEA YPs and student chapter members are invited to meet the seminar speakers at a reception (cash bar) on Monday, April 5<sup>th</sup> from 5:30 – 7:00 pm at the Monona Terrace Convention Center.

**Seminar – April 6th**

**7:20 -7:55 a.m. Registration and Continental Breakfast**

**8:00 - 8:10 a.m. Introduction and Welcome**

*Ralph B. (Rusty) Schroedel, President CSWEA, AECOM*

**8:10 - 8:40 a.m. Current Regulatory Priorities Issues - Land application of Biosolids**

*Dr. James E. Smith, Jr., Environmental Protection Agency*

This presentation will address biosolids management issues including energy considerations, cogeneration of heat and power from anaerobic digestion, upcoming regulatory issues, and beneficial uses. An update on the new Solids Processing Design and Management Manual prepared by US EPA and the Water Environment Federation will also be discussed.

**8:40 - 9:10 a.m. Maximizing Carbon Benefits for Biosolids**

*Dr. Sally Brown, University of Washington*

Different biosolids processing and end use options can result in significant carbon credits or debits. Fugitive emissions and sequestration potential are the primary sources of credits and debits with energy consumption and transport debits generally minimal in comparison.

**9:10 - 9:40 a.m. Biosolids Management Facilities as Resource Centers**

*Dr. David Parry, Camp Dresser & McKee*

Biosolids management offers opportunities for recovering and generating renewable resources. Biosolids can be used as a soil amendment, fertilizer, or fuel source. Biogas can be used to produce heat and power or be processed into bio-methane to supplement natural gas supplies or fuel CNG (compressed natural gas) vehicles. Examples of wastewater treatment plants are presented where the economic, environmental, social/political and technical objectives were considered when implementing sustainable practices.

**9:40 - 10:05 a.m. Integrating Sustainability Principles Into Solids Management Planning**

*Tom Sigmund, Green Bay MSD*

As Green Bay MSD planned for long term improvements to its solids management facilities, sustainability principles were incorporated (environmental, economic, and social impact issues) into the planning. The approach used multiple attributes with weighting factors applied to the scoring to ensure

a balanced approach to alternative selection and used stakeholder advisory groups. The presentation will review the approach and selected alternative.

**10:05-10:25 a.m.**

**Morning Break**

**10:25 - 10:50 a.m. Questions and Discussion**

*Morning Speakers*

Morning speakers answer questions collected from the audience. Ask these experts your questions on current and proposed regulations, energy recovery or other process questions.

**10:50 - 11:20 a.m. Biosolids as a “Renewable Fuel” - Are We There Yet?**

*Patricia Scanlan, Black & Veatch*

Biosolids contain significant inherent energy which can be recovered in the form of heat, steam, or combustible gas. As the country focuses on increasing the use of renewable energy, driven by a combination of fuel price spikes, climate change concerns, public awareness, and advancements in renewable energy technologies, the number of biosolids energy recovery technologies that are available has increased. This presentation will discuss existing and emerging biosolids energy recovery technologies, energy production expectations, and challenges to energy recovery, including costs and legislative impediments.

**11:20 - 11:45 a.m. Energy Management Initiatives at the Rochester, MN Water Reclamation Plant**

*Chet Welle, Rochester Water Reclamation Plant*

Recent replacement of two digester gas fired engine generators along with a plant expansion presented an opportunity to take a comprehensive look at plant energy management. This presentation will deal with the results of the initiatives including operational strategies for optimizing the use of digester gas for heating and electrical generation and heat recovery from the engine generators. Energy efficiency rebates received as a result of these initiatives will also be discussed.

*11:45 - 12:00 p.m. Questions and Discussion*

**12:00 - 1:00 p.m.**

**Lunch**

**1:00 - 1:40 p.m. Operating Problems in Anaerobic Digestion**

*Dr. David Jenkins, University of California, Berkley*

Anaerobic digestion is the most common method for stabilization of organic solids produced in wastewater treatment processes. While the process has been successful for over a century, changing wastewater and anaerobic digestion processes have resulted in new operating problems. These include: scale formation of struvite and vivianite, often associated with enhanced biological phosphate removal from wastewater; silica deposits in gas combustion equipment; and digester foaming, often due to waste activated sludge microorganisms with hydrophobic cell walls. Common digester operating problems and methods for dealing with them will be discussed in this presentation.

*1:40 - 2:00 p.m. Questions and Discussion*

**2:00 - 2:25 p.m. Fate of Tetracycline Resistance Determinants in Anaerobic and Aerobic Digestion**

*Dr. Timothy LaPara, University of Minnesota*

The proliferation of antibiotic resistant bacteria is an emerging area of concern to public health. Municipal wastewater, already known to contain substantial quantities of human pathogens, is likely an important reservoir of antibiotic resistance. This presentation will discuss the fate of genes encoding resistance to tetracycline in bench-scale and full-scale digesters.

*2:25 - 2:35 p.m. Questions and Discussion*

**2:35 - 2:55 p.m.**

**Afternoon Break**

**2:55 - 3:20 p.m. Anaerobic Co-digestion for Increased Renewable Energy**

*Dr. Dan Zitomer, Marquette University*

A significant opportunity exists to increase renewable energy production using existing municipal anaerobic digesters. Traditionally, anaerobic biotechnology has been applied to treat waste from one location. Co-digestion is now being used to digest a mixture of waste/co-digestates at centralized facilities. In this presentation, a project to develop anaerobic co-digestion of industrial wastes and primary sludge at the South Shore Wastewater Reclamation Facility, Oak Creek, WI will be described.

*3:20 - 3:30 pm Questions and Discussion*

**3:30 - 4:00 p.m. Sludge Minimization-A Survey of Current and Emerging Technologies**

*Dr. Art Umble, Greeley and Hanson*

Traditionally, processing and disposing of biosolids has been a high cost liability for wastewater utilities. Changes in regulatory policy, declining public acceptance, and increasing demands for energy recovery, have added pressures to evaluate alternative processes that reduce the quantity of biosolids produced and capitalize on related benefits. Technological approaches (chemical, biological, mechanical, electrical and combinations thereof) have opened options for utilities to consider. This presentation surveys technical bases as well as applicability of these technologies to wastewater utility operations today.

*4:00 - 4:10 p.m. Questions and Discussion*

**4:10 p.m. Closing Thoughts and Adjournment**

**15th Annual Education Seminar Speakers**

**James E. Smith, Jr., D.Sc.** - Senior Environmental Engineer & Chair USEPA's Pathogen Equivalency Committee Environmental Protection Agency, Cincinnati, OH

**Sally Brown, Ph.D** - Research Professor, University of Washington, Seattle, WA

**David Parry, Ph.D, PE, BCEE** - Vice President, Camp Dresser & McKee, Bellevue, WA

**Tom Sigmund, PE** - Executive Director, Metropolitan Sewerage District, Green Bay, WI

**Patricia Scanlan, PE** - Director of Residual Processes, Black & Veatch, Kansas City, MO

**Chet Welle** - Assistant Plant Manager, Water Reclamation Plant, Rochester, MN

**David Jenkins, Ph.D** - Professor Emeritus of Civil and Environmental Engineering University of California, Berkley, CA

**Timothy LaPara, Ph.D** - Associate Professor, University of MN, Minneapolis, MN

**Dan Zitomer, Ph.D** - Department of Civil and Environmental Engineering, Marquette University, Milwaukee, WI

**Art Umble, Ph.D., PE, BCEE** - Director of Process Engineering, Greeley and Hansen, Indianapolis, IN

*This program is being presented by the Central States Water Environment Association Inc. (CSWEA) as a service to its members. The information, materials and/or opinions presented by program participants represent their knowledge, and views on the selected topics and do not necessarily represent the position of CSWEA.*

**PLEASE REGISTER ME FOR THE 1-DAY EDUCATION SEMINAR  
Managing Biosolids in Our Energy Conscious Era - April 6, 2010**

Name (First and Last) \_\_\_\_\_  
 Organization or Affiliation \_\_\_\_\_  
 Street Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Telephone \_\_\_\_\_ Fax \_\_\_\_\_  
 E-Mail: \_\_\_\_\_  
 Amount Enclosed \_\_\_\_\_  
 Membership Association \_\_\_\_\_

- Registration fee (includes continental breakfast, lunch, refreshments and proceedings)  

Fee Per Person	by March 19	After March 19
Full	\$195	\$220
Student	\$25	\$30
- Attendance is limited to the first 306 registrants.
- Lunch will not be provided for those registering after March 31 or on-site.
- No refunds will be given after March 30.
- Cancelled checks will serve as registration verification. Please provide e-mail address ONLY if additional confirmation is desired.
- Make check payable to: Central States Water Environmental Association, Inc.**
- Detach this form and mail with check to:

**C/O Central States Water Environment Association  
3809 Shendoan Drive  
Crystal Lake, IL 60012**

**Visit our web site at <http://www.cswea.org> for more information and for ONLINE REGISTRATION AND PAYMENT.**

**Phone: Anne Lecuyer, (815) 356-7885 , FAX (815) 455-2715  
Email: CSWEA@ymail.com**

Please indicate below any special accommodations you require from the Convention Center to allow your full participation in the education seminar.

**Purchase orders will not be accepted.**