

2018

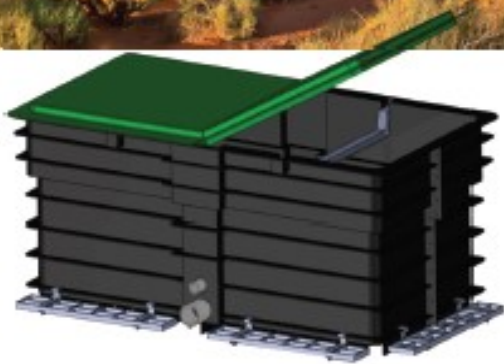
Southwest On-Site Wastewater Conference

January 31 & February 1, 2018

Laughlin, Nevada



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Arizona County Directors of Environmental Health Services Association

Andrew Linton, President
County Supervisors Association
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Welcome to the 2018 Southwest Onsite Wastewater Conference! This 11th biennial presentation of the conference brings you the latest in onsite wastewater research, technology and practice. We started two decades ago as a means for Arizona county environmental health programs to provide training for their onsite wastewater employees.

With each conference, the organizing committee looks at the current breadth of practice in onsite wastewater management to provide you with knowledge of advances and practices in the field.

Our conference theme, *One Water*, summarizes many of the topics that fill our program agenda.

We are honored to have a distinguished faculty of practitioners. They come from academia, industry and government. All have volunteered to provide you with the benefit of their experience. They are anxious to hear your questions as part of their presentations and to visit with you during breaks and at the Wednesday evening mixer.

Our exhibitors bring information on the latest equipment and services of interest to you. Please visit them all and take advantage of their expertise by discussing your activities with them. The support from our exhibitors helps us keep the cost of this conference low.

Now it's up to you. We urge you to take full advantage of the vast array of expertise and experience possessed by the conference participants, speakers and vendors. Meet everyone! Make new friends and business contacts, and enjoy the camaraderie.

Thank you for attending.

A handwritten signature in black ink, appearing to read "Andy Linton".

Andy Linton
ACDEHSA President

A handwritten signature in black ink, appearing to read "Kevin Chadwick".

Kevin Chadwick
Conference Chairman

2018 Southwest Onsite Wastewater Conference

Exhibitors

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2018 Southwest Onsite Wastewater Conference

Pre-Conference Sessions

Monday and Tuesday, January 29-30, 2018

NAWT Inspection Training and Certification

8:00 AM - 5:00 PM

Kitt Farrell-Poe, University of Arizona / David Gustafson, Woodland Engineering

Whether you are an experienced industry professional or just starting out in the business, you will find a great deal of value in the National Association of Wastewater Transporters, Inc. (NAWT) Inspection Training & Certification course. Your successful completion of the training will allow you to be recognized as a national certified inspector by NAWT you will be listed on a national registry of certified industry professionals for two years, and is part of the eligibility to becoming an inspector the Arizona Transfer of Property Inspection program. Certified Inspectors must complete a comprehensive onsite sewage treatment systems course covering terminology, treatment, tanks, construction methods, and application and pass a rigorous exam to receive national certification. There are only a selected number of professionals throughout the United States and Canada who have successfully completed both courses.

For future class information and to register, contact Aaron Tevik, Administrative Associate / University of Arizona / Ag & Biosystems Engineering / 520-621-3691 / atevik@email.arizona.edu

Exhibitor Set-up

Tuesday, January 30, 2018

4:00 PM - 8:00 PM

Registration

Tuesday, January 30, 2018

Conference Registration Desk Open

5:00 PM - 7:00 PM

Survey Reminder

We need your opinions. Please fill out the conference survey and submit it at the conclusion of the conference.



2018 Southwest Onsite Wastewater Conference

Conference Sessions

Wednesday, January 31, 2018

Registration

7:00 AM - 8:00 AM

Welcome

8:00 AM - 8:10 AM

Arizona County Directors of Environmental Health Services Association

Resource Management in a Resource Challenged World

8:10 AM - 9:00 AM

A. R. (Bob) Rubin, North Carolina State University (Emeritus)

Water management is increasingly challenging as rainfall distribution and intensity change, as groundwater levels fall to alarmingly low levels and as quality changes, and as demand for water resources increase from all sectors. This paper will discuss options and alternatives for using alternative sources of water for a variety of end uses. Included are examples from several states that have now developed criteria for water management that address quality issues, long term management needs, and operator certification.

Onsite Wastewater Design Flow Parameters: Flow Study Results

9:00 AM - 9:50 AM

William DeOreo, Aquacraft

Indoor household water use has been dropping steadily due to advances in the efficiencies of plumbing fixtures and appliances. Many design regulations and standards have not adapted to this new reality, which has led to unnecessary over-sizing of water systems and needless expense. Based on data from a recent Water Research Foundation study, we estimate that if all homes adopted the current best available technology for fixtures and appliances, indoor water use could drop easily to 96 gphd and feasibly to 72 gphd.

Conference Session Break

9:50 AM - 10:20 AM

Visit exhibits

Mixer Reminder

Please plan to stay for the mixer at 5 pm in the meeting room.

Visit with exhibitors, speakers and colleagues, and enjoy complimentary snacks with a cash bar.

Conference Sessions

Wednesday, January 31, 2018

Take a Step Back: Perspectives Over the Long Haul in Onsite Wastewater

10:20 AM - 11:10 AM

Dave Gustafson, Water Resource Center, University of Minnesota

The understanding of wastewater is changing. Its impact in the environment, the characteristics and even the climate patterns have a part in the need for looking at systems through different perspectives. This discussion will look at these changes and impacts for system performance. Also the Industry itself is changing, reviewing these industry trends and impacts is important as the future unfolds in 2019 and beyond.

Designing Systems to Site Water Capacity

11:10 AM - 12:00 PM

Colin Bishop, Anua

State or local regulations typically dictate the daily design flow based on the number of bedrooms in a home. This calculation determines the total flow for designing a system for a given property. Oftentimes, properties do not have sufficient area for the design flow, or site and soil conditions are not conducive for handling the design flow. System design strategies to appropriately address the site water capacity through hydraulic volume and rate control, as well as water conservation methods will be explored.

Lunch Break

12:00 PM - 1:10 PM

Lunch and visit exhibits

CONFERENCE GUIDING PURPOSE

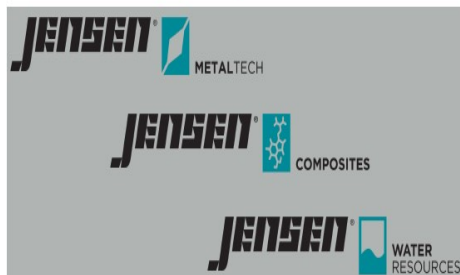
Providing Southwestern Professionals in all onsite wastewater disciplines a regular forum to:

- A. Keep abreast of the latest research
- B. Expand Networking options
- C. Stay in touch with National/Regional topics that are affecting or will affect the industry
- D. Hear challenging or conceptually expanding discussions
- E. Keep abreast of the latest technology
- F. See products displayed/demonstrated and meet reps
- G. Hear challenging or conceptually expanding discussions
- H. Meet, stay in touch with and learn from nationally prominent industry professionals



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Conference Sessions

Wednesday, January 31, 2018

Producing Water Reuse Quality Effluent from a High Strength Wastewater Source: A Case Study

1:10 PM - 2:00 PM

Sheryl Ervin, Biomicrobics

Producing water reuse quality effluent from graywater sources has gained in popularity in recent years with numerous full scale examples. To the authors' knowledge, no one has attempted to produce water reuse quality effluent from a high strength wastewater source. We will discuss how this was accomplished from a high strength restaurant wastewater source in Kingston, RI. After the original treatment system failed an engineering firm completed an extensive investigation of the wastewater characteristics. The influent characteristics were defined as: Design Flow <6,000 GPD, BOD5 ≤ 1,800 mg/l, TSS ≤ 1,000 mg/l, TKN ≤ 115 mg/l and FOG ≤ 400 mg/l. The effluent limits established by RIDEM were BOD5 < 30 mg/l, TSS < 30 mg/l and TKN <19 mg/l. This presentation will describe the design and review the results.

Finding New Water: Development of On- Site Non-Potable Water Reuse Systems

2:00 PM - 2:50 PM

Jay Garland, US EPA/Research & Development

The reuse of locally collected waters (blackwater, graywater, stormwater, roof runoff), for non-potable purposes toilet flushing clothes washing, unrestricted landscape irrigation) is of increasing interest. The talk will address 1) the development and validation of risk models to define the necessary level of treatment needed for safe reuse of waters, 2) the incorporation of these models in a national stakeholder group's guidance document on developing regulations for on-site non potable reuse systems, 3) research on how to both monitor the performance of the systems and evaluate the life cycle costs of different applications, and 4) a research strategy developed in collaboration with the national stakeholder group to address key research gaps to help advance effective adoption of these systems.

Conference Session Break

2:50 PM - 3:20 PM

Visit exhibits

Tiny homes: An Emerging Real Estate Trend

3:20 PM - 4:10 PM

Cindy Sessions, Sessions Real Estate

The course will teach you How the Tiny Home market is emerging. Key issues that are triggered by a transaction as it relates to water and waste water. Also what the jurisdictions need to be getting ready for as pertaining to the Tiny home market and its land set up regulations. We will also discuss what some jurisdictions are doing to prepare for Tiny home developments.

Reminder

CEU certificates will be distributed at the end of the conference.

2018 Southwest Onsite Wastewater Conference

Conference Sessions

Wednesday, January 31, 2018

Impacts of Whole-house Reverse Osmosis Systems on OSDS

4:10 PM - 5:00 PM

Kevin Koepenick, Baltimore County Environmental Protection and Sustainability

Since 2000, Baltimore County has seen a steady and concerning rise in complaints from residents with elevated chloride levels in their domestic well water supplies. In most instances, the cause is thought to be application of road salt by county, state, and private contractors. Initially, the technical approach was to focus on options for drilling a new well or installing point-of-use treatment systems. In recent years, there has been a surge of residents installing whole-house reverse osmosis (R/O) systems to address elevated chloride and sodium levels. These use of these whole-house R/O systems can result in the generation of between 2 to 4 times the volume of wastewater being directed to the onsite sewage disposal system. This presentation will discuss the various ways Baltimore County has handled the issue and compare the approach with available literature and neighboring state regulation.

Exhibits and Mixer

5:00 PM - 6:30 PM

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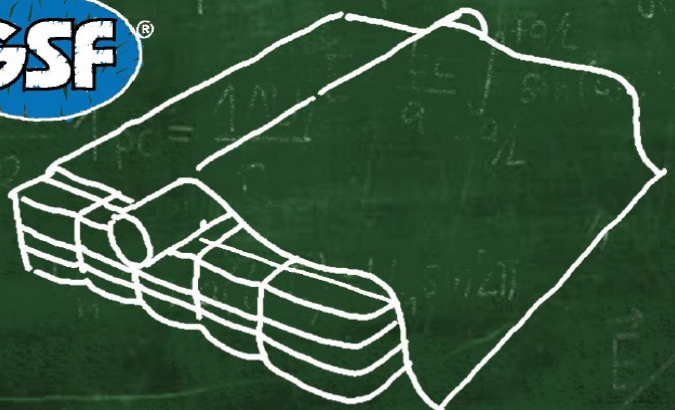
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Conference Sessions

Thursday, February 1, 2018

Opportunities and Challenges in Regulating Safe Urban and Rural Onsite Water Recycling

8:00 AM - 8:50 AM

Chuck Graf, Arizona Department of Environmental Quality

Arizona has a long history of water reuse starting in at least 1926. Currently, as much as 2/3 of all wastewater treated by sewage treatment plants in Arizona is beneficially reused. ADEQ recently adopted revised recycled water rules that focus mainly on this type of reuse. However, little wastewater generated from on-site or decentralized systems is reused. This includes reuse from alternative on-site wastewater treatment systems located mostly in rural areas (i.e., off the sewer grid) as well as onsite reuse from waters generated at buildings and larger complexes located in urban settings (that is, served by traditional water/sewer infrastructure). This presentation discusses the regulatory challenges and opportunities for safely reusing and recycling these onsite waters and how they compare with ADEQ's long-standing regulatory approach for the reuse of reclaimed water from community wastewater treatment plants.

What does a Type I.09 Aquifer Protection Permit inspection look like?

8:50 AM - 9:40 AM

Ray Morgan, Arizona Department of Environmental Quality

A quick review will be given of what facilities are covered by this permit and why this particular permit was created. A brief summary of the permit requirements will follow next. The remaining part of the presentation will be a pictorial review of facilities inspected and the types of deficiencies that were discovered during the inspection.

Conference Session Break

9:40 AM - 10:10 AM

Visit exhibits

Maryland Strategies for Reducing Nitrogen Loading from Septic Systems to the Chesapeake Bay

10:10 AM - 11:00 AM

Kevin Koepnick, Baltimore County Environmental Protection and Sustainability

In an effort to meet the TMDL requirements set forth in the Clean Water Act, Maryland created the Bay Restoration Fund (BRF) in 2004 which requires all property owners to pay a fee on improved properties that goes towards reducing nutrients (specifically nitrogen) loading to the Chesapeake Bay. Specifically, the money can be used for upgrading wastewater treatment plants, upgrading existing septic systems with nitrogen removal technology, connecting buildings with existing septic to public sewer, and for planting cover crops on agricultural lands. This presentation will provide an overview of the BRF Program and highlight the changes, successes and challenges that the state and counties have faced over the last 14 years.

2018 Southwest Onsite Wastewater Conference

Conference Sessions

Thursday, February 1, 2018

Onsite Wastewater Treatment for Reuse with Packed Bed Filter Technology

11:00 AM - 11:50 AM

Jeff Pringle, Orenco

This presentation will discuss advanced treatment of blackwater and greywater for applications using packed bed filter technology. Several projects that reuse effluent will be used as examples. The focus of the presentation will be commercial projects and especially multifamily greywater applications and different types of blackwater reuse projects. The presentation will show the technology behind the treatment and specifics of reuse possibilities.

Lunch Break

11:50 AM - 1:00 PM

Lunch (on your own) and visit exhibits

Effective Management of Septage and FOG: Options for Handling By-Product of Wastewater Treatment

1:00 PM - 1:50 PM

A.R.(Bob) Rubin, North Carolina State University (Emeritus)

Septage and FOG Management are critical elements in the sustainable management of water resources. Without effective options for handling these byproducts of wastewater treatment system malfunction is highly likely. This paper will describe some permitting requirements for management of these wastewater residuals and provide examples of operating systems meeting PFRP and PSRP criteria established by USEPA.

Conference Session Break

1:50 PM - 2:20 PM

Visit exhibits

New Standards - New Future - for Nonsewered Waste Systems

2:20 PM - 3:10 PM

Karleen Kos, Portable Sanitation Association International

How do you feel about the portable restroom and septic options currently in use? If you are like most people, there are things you like and things you'd sooner avoid. In 2011, the Bill and Melinda Gates Foundation initiated the Reinvent the Toilet Challenge to bring sustainable solutions to the 2.5 billion people worldwide who don't have access to safe, affordable sanitation. While this effort has been aimed at the unique challenges of developing countries, the implications are enormous for portable sanitation and service to areas relying on septic systems in the developed world. In this session Karleen Kos, Executive Director of the Portable Sanitation Association International, will frame the current situation, provide background on how we got here, and show you how the world is coming together to develop new approaches. She'll show you some of the new sanitation and toilet technologies on the horizon - concepts that could radically affect your portable sanitation and septic businesses down the road. There will be opportunities and threats for your company. Karleen will wind up the session with ideas about the timing of the changes and leave you with plenty to think about as you prepare for the future.

2018 Southwest Onsite Wastewater Conference

Conference Sessions

Thursday, February 1, 2018

Traditions and Historic Practices vs. Science: Shifting to a Risk-Based Model for Onsite

3:10 PM - 4:00 PM

Colin Bishop, Anua

Current onsite practices and regulations are a mix of traditions coupled with 100 year old best guess science. Understanding of the “onsite microbiome” has increased dramatically over the past two decades. New science coupled with existing and emerging technologies are poised to solve this century’s water challenges. A new forward-thinking framework based on addressing risks will provide flexibility and accountability for local regulators and practitioners. The framework will facilitate implementation of sustainable full water reuse with little “new” water required.

Conference Ends

4:00 PM

Pick up continuing education certificates

Presentations will be posted on our web site in a few weeks at www.southwestconference.net

THE ARIZONA COUNTY DIRECTORS OF ENVIRONMENTAL HEALTH SERVICES ASSOCIATION (ACDEHSA)

Thank you for attending the 2018 Southwest Onsite Wastewater Conference.

Special thanks goes to all of our speakers and exhibitors, whose participation helped make this year’s conference a success.

Please mark your calendar:

2019 Southwest Environmental Health Conference, January 30 & 31

2020 Southwest Onsite Wastewater Conference, January 29 and 30

For upcoming events, visit us at:
www.southwestconference.net



Speaker Biographies

A. R. Rubin Ph.D.

A. R. Rubin is an emeritus professor in the department of biological and agricultural engineering at North Carolina State University. From 1999 through 2005 he also served as a visiting scientist at USEPA where he assisted in the development of management guidelines for onsite and decentralized wastewater systems. His academic interest has addressed resource recovery from waste.

William DeOreo

Mr. DeOreo has been actively practicing water engineering since 1978 after receiving his Master Degree in Civil and Environmental Engineering from the University of Colorado, Boulder. He has worked both in the public sector and as a private consultant. His main interests are in development of innovative supplies of water for municipal uses, improving the yield of urban water systems through better water planning and management, integration of urban water uses into watershed analyses, and development of computer based applications to assist with water planning. Mr. DeOreo is a member of the Planning and Evaluation sub-committee of the AWWA Water Conservation national Committee.

Mr. DeOreo has conducted several large water studies in the United State and around the world. He was principal investigator on both the California Single Family Home Water Use Efficiency Study and two Residential End Uses of Water Studies sponsored by the Water Research Foundation.

Dave Gustafson, P.E.

Dave Gustafson, PE is a registered Engineer working in the Water Resource Center at the University of Minnesota. He has been dealing with sewage for over 25 years in municipal scale systems and backyard treatment technologies. He has been educating and assisting onsite treatment professionals in MN, nationally and internationally for over twenty years. His position allows him to be active in the troubleshooting and evaluation of systems in MN and Nationally. He has learned through the years that we can learn from each other and getting your hands dirty helps to keeps your thoughts clear.

Colin Bishop

Colin Bishop is President of Anua – a company that provides sustainable Clean Water and Clean Air solutions which are integrated to simplify life and complement the natural environment. He is a Registered Sanitarian in Arizona, Louisiana, Ohio, Texas, and West Virginia. He is a Registered Environmental Health Specialist through the National Environmental Health Association. He has a B.S. in Zoology from Brigham Young University. Colin is a spiritual explorer, tech guru, outdoor enthusiast, and small-scale organic farmer.

Sheryl Ervin

Sheryl Ervin, Director of Regulatory Affairs with Bio-Microbics since 2013, received her B.S. in Geology from Missouri State University and M.S. in Geology from New Mexico State University. Prior to joining Bio-Microbics, Ms. Ervin worked for 17 years as a geologist in the environmental and petroleum industries; the last nine included source water protection planning, grant management and government regulatory work in onsite wastewater for the State of Kansas. She currently serves on the NOWRA Education Committee, on the Kansas Small Flows Association (KSFA) board and holds the position of treasurer, on the State Onsite Regulators Alliance (SORA) Sustainability and Captains of Industry (COI) subcommittees and is a member of the SepticSmart Week Steering Group. As a state regulator, she served on the SORA board and held the positions of President-Elect and President.

Jay L. Garland, Ph.D

Dr. Garland works for the United States Environmental Protection Agency in the Office of Research and Development, and leads a project team focused on the testing and development of decentralized system for water reuse. Prior to joining the EPA in 2011, he worked on NASA's efforts to develop regenerative life support systems for extended space missions to the moon or Mars for over 20 years, including his PhD work at the University of Virginia Department of Environmental Sciences

Cindy Sessions

Cindy Sessions has over 20 years' experience in the Real Estate industry both as an agent and a broker. Cindy's brokerage is currently established in the PHX metro area and previously it was located in the White Mountains of AZ. As a Broker in the white mountains Cindy gained a great deal of experience in land use regulations such as, Septic, Easements, subdivision and land splitting regulations, and Zoning and other regulations often pertaining to tiny home developments. Cindy has worked with the Arizona building officials as the President of the Grand Canyon Chapter of ICC, a board of the AZBO Chapter of ICC, and Co-Chair of the AZBO Education Committee. Cindy is the mother of 5 sons and 6 daughters and has 18 Grandchildren.

Speaker Biographies

Kevin Koepenick L.E.H.S.

Mr. Koepenick (pronounced “Kep-nik”) has been the manager of the Well and Septic program in Baltimore County for the past 20 years. He has a B.S. in Geology from Virginia Tech and an M.S. in Geosciences from Penn State. Before coming to Baltimore County, he worked for an environmental consulting firm for 5 years performing site investigations/assessments for industrial and Federal properties. He served as a board member for the Maryland Onsite Wastewater Professionals Association (MOWPA) from 2006-2015.

Chuck Graf

Chuck Graf is a Principal Hydrogeologist at the Arizona Department of Environmental Quality. He previously served as Deputy Director of the Water Quality Division at ADEQ for eight years. He has a degree in Engineering Science from Arizona State University and is a Registered Geologist in Arizona. Earlier, he has worked in engineering, hydrological, and water resources positions with the U.S. Forest Service, Arizona Department of Water Resources, and Tetra Tech International. Over his career, Mr. Graf has directed groundwater, surface water, and drinking water quality assessment, protection, cleanup, and regulatory activities. At ADEQ, Mr. Graf managed the agency’s rulemaking activities in 2001 governing community sewage treatment plants, on-site wastewater treatment systems, and the safe reuse of reclaimed water. He now leads the Department’s effort to update the reclaimed water rules from 2001. ADEQ adopted a first installment of updated rules from this effort, under the umbrella of a new recycled water nomenclature, which became effective on January 1, 2018. Mr. Graf also currently serves as a Commissioner on the National Blue Ribbon Commission on Onsite Non-potable Water Systems.

Raymond D. Morgan. P.E

Raymond Morgan is a graduate of northern Arizona University with a major in Engineering Technology. He is a licensed professional engineer in the state of Arizona and New Mexico. He is also an Arizona licensed wastewater treatment plant operator. He is a former Chief Engineer for Pima County Wastewater Management where he worked for over 25 years in a variety of engineering positions. He presently works for the Arizona Department of Environmental Quality as an environmental engineer and compliance officer.

Jeff Pringle

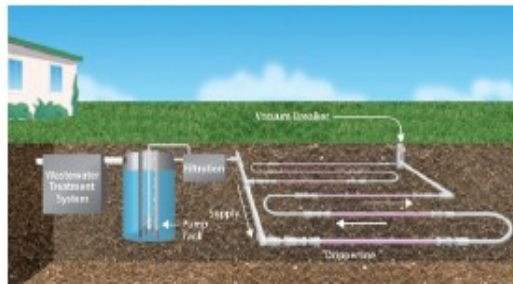
Jeff Pringle is an Account Manager for the Western U.S. Region at Orenco Systems Inc., a wastewater equipment manufacturing firm based in Sutherlin, Oregon. In this role, he works to manage and grow customer accounts in California, Nevada, Arizona, and Hawaii. Since joining Orenco in 2005, Jeff has become a frequent presenter for the company, providing training for regulators, engineers, installers, service providers, and electricians, as well as other Orenco customers. Jeff has an Associate of Applied Science degree in digital systems technology from Umpqua Community College in Roseburg, Oregon.

Karleen Kos.

Karleen Kos has been the Executive Director of the Portable Sanitation Association International (PSAI) since January 2014. Under her leadership the organization has introduced a Code of Excellence for the portable sanitation industry, developed four new training courses on portable sanitation-specific topics, updated three ANSI-compliant standards for the industry, and begun the process of modernizing the Association's certification program for portable sanitation professionals. Each week Karleen writes articles on industry-specific topics for Association Insight, the PSAI's newsletter for Members, and she is a regular contributor to PRO Magazine. Her long career in nonprofit organizational leadership has provided Karleen many opportunities to develop conference content and to serve as a trainer. She holds master’s degrees in counseling and business administration, and she is a certified association executive.

Notes

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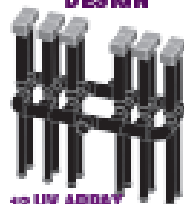
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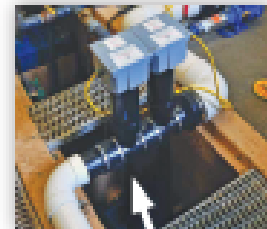
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