

## Sunday, September 10, 2017

7:30 a.m. – 1:00 p.m.	<b>Technical Tour:</b> Town of Gilbert Riparian Preserve at Water Ranch & the Scottsdale Water's Reclamation & Advanced Water Treatment Plant <i>(Additional Fees Apply)</i>			
1:00 p.m. – 6:00 p.m.	Registration Open			
	<b>A1</b> Reuse Boot Camp Part I	<b>B1</b> Salinity Topics	<b>C1</b> Treatment Topics	<b>D1</b> Advances in Desalination I
1:30 p.m. – 2:00 p.m.		Salinity: Reuse's Phantom Menace  <i>Robert McCandless, Brown and Caldwell</i>	Mainstream Anammox Biofiltration as Part of a Sustainable Water Reuse Approach  <i>Sandeep Sathyamoorthy, Black &amp; Veatch</i>	Current Status and Perspectives: RO, FO, PRO  <i>Val Frenkel, Greeley and Hansen</i>
2:00 p.m. – 2:30 p.m.		Means to Control Salinity without Desalination Processes in Reuse Projects  <i>Joe DiGiorgio, Stantec</i>	Design-Build of a 1 MGD Advanced Water Treatment Demonstration Facility for Managed Aquifer Recharge  <i>Ben Stanford, American Water</i>	Piloting of Thin Film Nanocomposite RO Membranes for Indirect Potable Reuse in Orange County Water District's GWRS  <i>Dian Tanuwidjaja, LG Chem</i>
2:30 p.m. – 3:00 p.m.		Beneficial Reuse of RO Concentrate at the City of Goodyear  <i>Michael Hwang, CH2M</i>	Advancing the Knowledge of Ceramic MBR Performance for Municipal Water Reuse  <i>Ahmed Hussein, Black &amp; Veatch</i>	Potable Reuse Case Study for Full-scale Predesign of Reverse Osmosis with 95% Recovery  <i>Shane Trussell, Trussell Technologies, Inc.</i>
3:00 p.m. – 6:30 p.m.	Exhibit Hall Open			
3:00 p.m. – 3:30 p.m.	Networking Break			
	<b>A2</b> Reuse Boot Camp Part II	<b>B2</b> Agricultural Reuse	<b>C2</b> Risk and Human Health Topics	<b>D2</b> Advances in Desalination II
3:30 p.m. – 4:00 p.m.		Bringing Recycled Water to Thirsty Central Valley Ag Lands: Navigating the Regulatory Framework  <i>Penny Carlo, Carollo Engineers</i>	A Good Quantitative Microbial Risk Assessment takes More than a Slick Monte Carlo Simulation  <i>Eva Steinle-Darling, Carollo Engineers</i>	Predicting RO Removal of Toxicologically Relevant Unique Organics  <i>Daisuke Minakata, Michigan Technological University</i>
4:00 p.m. – 4:30 p.m.		New (Re)uses in Colorado: Acting Now to Ensure the Future of Colorado's Water	A Tale of Two Trains: What Have We Learned about Demonstrating Water Safety from a	Performance Analysis of 20 Micron Self-Cleaning Disc Filter versus Cartridge Filters for RO Membrane Protection

		<i>Allegra da Silva, Stantec</i>	Chemical and Biological Monitoring Program?  <i>Janelle Amador, CDM Smith</i>	after Media filtration in a SWRO system  <i>Peachie Hytowitz, Amiad Water Systems</i>
4:30 p.m. – 5:00 p.m.		Increasing the Use of Recycled Water for Irrigation of Agricultural Crops in the U.S.  <i>Kara Nelson, University of California, Berkeley</i>	Failure? - Extensive Data and Statistical Tools Demonstrate the Safety of DPR  <i>Austa Parker, Carollo Engineers</i>	A Pilot-Scale Continuous Flow Photobioreactor to Improve Water Recovery from Reverse Osmosis-Based Brackish Groundwater Desalination  <i>Harshad Kulkarni, Pacific Advanced Civil Engineering, Inc.</i>
5:00 p.m. – 6:30 p.m.	<b>Welcome Reception &amp; Reuse Beer Fest</b>			

## Monday, September 11, 2017

7:30 a.m. – 3:30 p.m.	Registration Open		
7:30 a.m. – 3:30 p.m.	Exhibit Hall Open		
7:30 a.m. – 8:30 a.m.	Continental Breakfast		
8:30 a.m. – 10:00 a.m.	<b>Opening Session</b>  <i>Warren Tenney, Executive Director, Arizona Municipal Water Utilities Association</i>		
10:00 a.m. – 10:30 a.m.	Networking Break		
10:00 a.m. – 10:30 a.m.	Poster Presentations		
	<b>A3</b> Big Picture Session: National Perspectives	<b>B3</b> Non-RO Potable Treatment Studies	<b>C3</b> Water Quality Monitoring
10:30 a.m. – 11:00 a.m.	Water Infrastructure Finance and Innovation Act (WIFIA) Update <i>Danusha Chandy, U.S. Environmental Protection Agency</i>  Effective Statutes and Regulatory Policies for Water Reuse <i>Karen Raucher, Corona Environmental Consulting</i>	A Robust “Membrane-free” Advanced Treatment Solution for Inland IPR Projects  <i>Vijay Sundaram, University of Nevada, Reno</i>	Pure Water Proof: Extensive Testing Leads to Water Quality Confidence  <i>Andrew Salvesson, Carollo Engineers</i>
11:00 a.m. – 11:30 a.m.	Coast to Coast: Creative Water Reuse Options in the USA <i>Rob Morrow, Woodard &amp; Curran</i>	Innovative Potable Water Purification Without RO - Direct Potable Reuse Demonstration Pilot in Central Florida  <i>Pranjali Kumar, Carollo Engineers</i>	Comprehensive Sampling of MBR Systems and Full-scale Facilities for Pathogen Log Credits to MBR for Potable Reuse  <i>Zakir Hirani, Stantec</i>

11:30 a.m. – 12:00 p.m.		Evaluating Human Health Risks Associated with Potable Reuse: Use of System Dynamics Models to Compare Reverse Osmosis and Ozone-biofiltration  <i>Erfaneh Amoueyan, UNLV</i>	Using Adenosine Triphosphate as a Rapid Tool to Assess Microbiological Growth and Removal through a Recycled Water Treatment Plant  <i>Ashlee Donaher, LuminUltra Technologies</i>
12:00 p.m. – 1:00 p.m.	Networking Luncheon with Exhibitors		
	<b>A4</b> Big Picture Session: Industrial Reuse Scorecard	<b>B4</b> Arizona Potable Reuse Session	<b>C4</b> Decentralized Reuse
1:00 p.m. – 1:30 p.m.	<b>Scorecard for Evaluating Opportunities in Industrial Reuse (A WE&amp;RF Research Update)</b>  This panel features investigators of industrial water reuse and their industrial partners. Panelists will cover: obstacles to implementation of water reuse projects in industry; how to understand the true versus perceived cost of water in the industrial setting; and provide an overview of the Scorecard tools under development.		Decentralized Direct Potable Water Reuse Research Demonstration  <i>Manisha Kothari, San Francisco Public Utilities Commission</i>
1:30 p.m. – 2:00 p.m.			Performance Evaluation of a Sequencing Batch Membrane Bioreactor Using Principal Component Analysis  <i>Kathryn Newhart, Colorado School of Mines</i>
2:00 p.m. – 2:30 p.m.		<i>Mel Butcher, Arcadis</i>  <i>Brian Moore, Arcadis</i>  <i>Neil Kern, Duke Energy</i>  <i>Nicole Krenner, 3M</i>	In-Stream Wetland as a Potential Low Cost Treatment Technology in Rural Areas  <i>Ashraf Ismail, Drainage Research Institute, National Water Research Center</i>
2:30 p.m. – 3:00 p.m.		<i>Todd Williams, GM</i>	
3:00 p.m. – 3:30 p.m.	Networking Break		
3:00 p.m. – 3:30 p.m.	Poster Presentations		
	<b>A5</b> Big Picture Session – Reuse Challenges and Solutions	<b>B5</b> DPR Technical Considerations	<b>C5</b> Industrial Reuse
3:30 p.m. – 4:00 p.m.	Reuse Pricing: Challenges and Opportunities  <i>Robert Raucher, Corona Environmental Consulting</i>	Nitrosamines and Precursors Control Strategies for Potable Reuse  <i>Joline Munoz, City of Los Angeles</i>	Multipurpose Use of Municipal Reclaimed Water at Nuclear Power Plant  <i>Mohammad Badruzzaman, Stantec</i>
4:00 p.m. – 4:30 p.m.	Coming to Terms: Understanding and Resolving Critical Issues in	An Approach for Technology Selection for IPR in the UK	Reuse of High Strength Wastewater in the Dairy Industry

	Water Reuse Agreements <i>Eric Rosenblum, EnviroSpectives</i>	<i>Charlotte de Witte, Thames Water</i>	<i>Gerard Van Gils, Kemco Systems Co LLC</i>
4:30 p.m. – 5:00 p.m.	Successful Water Reuse Communication Techniques Illustrated <i>Patricia Tennyson, Katz &amp; Associates</i>	Development of Blending Guidelines for Water from DPR Facilities <i>Justin Sutherland, Carollo Engineers</i>	Teaching an Old Pretreatment System New Tricks - San Jose State University Boiler Feed Water Conversion Project <i>Ryan Holloway, Kennedy/Jenks Consultants</i>
5:00 p.m. – 5:30 p.m.	Seeing is Believing: How to Make the Most of Your Demonstration Facility <i>Brent Eidson, City of San Diego Public Utilities Department</i>	To Pilot Test or Not to Pilot Test, That is the Question <i>Bruce Chalmers, CDM Smith</i>	Optimizing Water Reuse: An Advanced Water Balance Tool for Innovative Decision Support <i>Charlie He, Carollo Engineers</i>
6:00 p.m. – 10:00 p.m.	<b>Monday Night Optional Event – Arizona Diamondbacks Baseball Game vs. Colorado Rockies</b> <i>(additional fees apply)</i>		

## Tuesday, September 12, 2017

7:30 a.m. – 2:00 p.m.	Registration Open			
7:30 a.m. – 3:30 p.m.	Exhibit Hall Open			
7:30 a.m. – 8:30 a.m.	Continental Breakfast			
	<b>A6 Panel Discussion: Going Viral</b>	<b>B6 SAT and Reuse</b>	<b>C6 Direct Potable Case Studies</b>	<b>D6 Reuse in Varied Geographies</b>
8:30 a.m. – 9:00 a.m.	A New Paradigm for Assessment of Virus Reduction by Recycled Water Treatment Processes <i>Charles Gerba, University of Arizona</i>	The Removal Potential of Organic Matter for SAT Systems <i>Farzaneh Shabani, University of California, Los Angeles</i>	Evaluating the Sustainability of DPR in Las Vegas, NV <i>Cory Dow, Carollo Engineers</i>	
9:00 a.m. – 9:30 a.m.	How Can We Meet Pathogen LRV Requirements in Potable Reuse Projects if MBR Does not Get Any Pathogen Credits?	Is My Purified Water Too Pure for Groundwater Replenishment? <i>Sunny Wang, Brown and Caldwell</i>	On-Site Direct Potable Reuse: Putting Ohio on the Water Recycling Map <i>Philip Schmidt, Philip J. Schmidt Technical Consulting Inc.</i>	Estimating the Impact of Drought on Groundwater Resources of the Marshall Islands <i>Brandon Barkey, J-U-B ENGINEERS, Inc.</i>
9:30 a.m. – 10:00 a.m.	<i>Ufuk Erdal, AECOM</i> Pepper Mild Mottle Virus (PMMoV) as a Potential Indicator of Enteric Virus Removal during Water	Developing an Alternative Treatment Train for the Los Angeles Groundwater Recharge Project with Soil Aquifer Treatment	Small Scale Direct Potable Recycle Plant for a Remote Community <i>Peter Scales, University of Melbourne (Australia)</i>	Statewide Collaboration for a Direct Potable Reuse Regulatory Framework and Outreach in Colorado

	Recycling Treatment Processes  <i>Walter Betancourt, University of Arizona</i>	<i>Roshanak Aflaki, City of Los Angeles, Bureau of Sanitation</i>		<i>John Rehring, Carollo Engineers</i>
10:00 a.m. – 10:30 a.m.	Networking Break			
10:00 a.m. – 10:30 a.m.	Poster Presentations			
	<b>A7 Panel Discussion: Arizona Reuse Perspectives</b>	<b>B7 Groundwater Topics</b>	<b>C7 Advanced Disinfection Topics</b>	<b>D7 Major Reuse Program Updates</b>
10:30 a.m. – 11:00 a.m.	<p>Agua Dulce (Sweet Water) – An Innovative Approach to Reclaimed Water Use Can Deliver Multiple Benefits to a Desert City</p> <p><i>Tim Thomure, Tucson Water</i></p> <p>A Quarter Century Long Public Private Partnership Supporting Water Reuse in Scottsdale, Arizona</p> <p><i>Art Nuez, City of Scottsdale</i></p> <p>Treated Wastewater Recharge and Recovery Efforts in Lake Havasu City, AZ</p> <p><i>Doyle Wilson, Lake Havasu City</i></p>	<p>First Aquifer Injection and Storage in the State of New Mexico of Highly-Treated Reuse</p> <p><i>Jim Chiasson, City of Rio Rancho</i></p>	<p>Full-Scale Results of New Advanced Oxidation Process for 12 MGD IPR Plant</p> <p><i>Keel Robinson, Xylem</i></p>	<p>One Water Los Angeles 2040 Plan: Big and Bold Water Reuse Planning to Make Los Angeles a More Resilient City</p> <p><i>Inge Wiersema, Carollo Engineers</i></p> <p><i>Lenise Marrero, City of Los Angeles, LA Sanitation</i></p>
11:00 a.m. – 11:30 a.m.		<p>South Hillsborough Aquifer Recharge Program (SHARP), Hillsborough County</p> <p><i>Michael Weatherby, HydroGeo Consulting, LLC</i></p>	<p>Upgrading Non-potable to Potable Reuse: What Do We Do with UV?</p> <p><i>Wayne Lem, TrojanUV</i></p>	<p>Update on the Tampa Augmentation Project - Evaluating the Feasibility of a 50-mgd Potable Reuse Aquifer Recharge/Recovery Project in Southwest Florida</p> <p><i>David Ammerman, Carollo Engineers</i></p> <p><i>Seung Park, City of Tampa Water Department</i></p>
11:30 a.m. – 12:00 p.m.		<p>White Paper on Groundwater Replenishment with Recycled Water on Agricultural Lands (WRRF-16-03)</p> <p><i>Robert Morrow, Woodard &amp; Curran</i></p>	<p>Water Re-use in Developing Countries: Utilizing Ozone, UV and AOP for Safe Water Supply in South Africa</p> <p><i>Lucinda Jooste, Xylem</i></p>	<p>Oklahoma's 360-Degree Development of IPR Regulations</p> <p><i>Michael Graves, Garver</i></p>
12:00 p.m. – 1:30 p.m.	Awards Luncheon and Annual Membership Meeting			

	A8 Panel Discussion: Source Control for Potable Reuse	B8 Seawater Desalination	C8 Aspects of MBR	D8 Advances in Membranes
1:30 p.m. – 2:00 p.m.	Doing DPR? - Don't Forget Source Control!  <i>Alan Rimer, EnviroTechNovations</i>	Pretreatment for Seawater Desalination by Reverse Osmosis: Synthesis of Findings from Full-Scale Operating Plants  <i>Joseph Jacangelo, Stantec</i>	Giving Credit Where Credit is Due – MBR Performance Monitoring for Potable Water Applications  <i>Stephen Katz, GE Water &amp; Process Technologies</i>	Filtration of Secondary Municipal Wastewater Using a Segmented Ceramic UF Membrane  <i>Aditya Kumar, Nanostone Water Inc</i>
2:00 p.m. – 2:30 p.m.	IPR and DPR a Marriage Made in Heaven  <i>Gary Hunter, Black &amp; Veatch</i>	Characterizing the Impact of Blending Desalinated Seawater with Existing Conventional Supplies  <i>Brent Alspach, Arcadis</i>	MBRs for Potable Water Reuse - Old Membranes, New Membranes, Cut Fibers, and Extensive Pathogen and Surrogate Monitoring  <i>Andrew Salveson, Carollo Engineers</i>	Righting the Ship: Direct Replacement of Polypropylene Modules with PVDF to Recover Declining MF System Performance  <i>Mariano Bautista, West Basin Municipal Water District</i>
2:30 p.m. – 3:00 p.m.	Source Water Quality Requirements for Conventional Treatment of Stormwater, Graywater, and Treated Wastewater for Potable Reuse  <i>Chris Hill, Arcadis</i>	Eighteen Months of Operating Experience at the Carlsbad Desal Project; Lessons Learned and Implications for Alternative Delivery Approaches  <i>Stan Williams, Poseidon Water</i>	Assessment of Retrofitting an SBR with MBR technology for Municipal Wastewater Reuse  <i>Samantha Kendrick, H2O Innovation</i>	Maximizing Pathogen Removal Credits for UF and RO In Potable Reuse– Full-scale Experience at the Beenyup Advanced Water Recycling Plant  <i>Jim Lozier, CH2M</i>
3:00 p.m. – 3:30 p.m.	Networking Break			
3:00 p.m. – 3:30 p.m.	Poster Presentations			
	A9 Panel Discussion: Applying MBR in Potable Water Reuse	B9 Water Quality	C9 Ozone	D9 Economic Evaluations
3:30 p.m. – 4:00 p.m.	Membrane bioreactor technology is a well-established means of enabling the reuse of wastewater. This moderated session will dive deep into the various opportunities, challenges, and the latest scientific findings associated with the application of MBR in potable water reuse. The session will contain diversified	Evaluation of Models and Tracers for Indirect Potable Reuse through Surface Water Augmentation  <i>David James, UNLV</i>	Addressing Ozone-BAC Regulatory Barriers Related to DBPs  <i>Vijay Sundaram, Stantec</i>	Assessment of Social and Environmental Criteria to Determine the Benefits of Potable Reuse in Reno, NV  <i>Laura Haak, University of Nevada, Reno</i>
4:00 p.m. – 4:30 p.m.		Characterization of Photobiologically-Treated Reverse Osmosis Concentrate from Advanced Water Reclamation Facilities  <i>Yuanyuan Zhao, Pacific</i>	Safe and Sustainable Water Reuse in New Mexico Through Ozone-Based AOP  <i>Keel Robinson, Xylem</i>	Economic and Environmental Life Cycle Analysis of Natural Gas versus Grid Electricity for Seawater Desalination  <i>Carla Cherchi, Stantec</i>



	perspectives with participation from end-users, consulting engineers and vendors.	<i>Advanced Civil Engineering, Inc.</i>		
4:30 p.m. – 5:00 p.m.	<i>Andrew Salvesson, Carollo Engineers</i> <i>Zakir Hirani, Stantec</i> <i>Steve Katz, GE Water &amp; Process Technologies</i>	Are TOC and COD Limits Appropriate for Regulating Potable Reuse? Analyzing Organics through the Domestic Water Cycle - Research Results from WRRF Project 15-04  <i>Larry Schimmoller, CH2M</i>	Interim Ozone Project to Provide Enhanced Title 22 Reuse Water  <i>Roshanak Aflaki, City of Los Angeles, Bureau of Sanitation</i>	Triple Bottom Line Tool for Water Supply Planning: Case Studies of Potable Reuse and Other Water Supply Options  <i>Stephanie Ishii, Hazen and Sawyer</i>
5:00 p.m. – 6:00 p.m.	<b>Women of Water</b> Ladies, we are continuing the tradition of a Ladies Happy Hour. We will be holding it at <i>Bitter and Twisted</i> which is on the way to our evening event at The Duce. Come join us for a unique cocktail.			
6:00 p.m. – 10:00 p.m.	<b>Networking Dinner at The Duce</b> <a href="http://theducephx.com/">http://theducephx.com/</a>			

## Wednesday, September 13, 2017

8:30 a.m. – 10:00 a.m.	Registration Open
8:30 a.m. – 9:30 a.m.	<b>Breakfast Panel Discussion - Conclusion of the Beer Challenge Panel</b>
9:30 a.m. – 10:00 a.m.	Networking Break
10:00 a.m. – 11:30 a.m.	<b>Medical Community Panel Discussion – Prescription for Public Perception</b>  According to public opinion polls, people trust scientists, medical professionals and public health officials more than anyone else when it comes to the safety of recycled water. That's why WateReuse has launched an initiative to build support for water reuse among the research and medical community. Learn what we've learned, what doctors are saying about water reuse, and what you can do to connect with this critical constituency in your community.
11:30 a.m. – 12:00 p.m.	<b>Closing Wrap-Up Session and Look Ahead to 2018</b>

### Technical Poster Presentations and Stand-by Speakers

City of Daytona Beach's Bennett Swamp Rehydration Project  
*Tim Walsh, CH2M*

Designing Reuse Ultraviolet Disinfection Systems by the Book!  
*Bill Sotirokas, Carollo Engineers*

Entrained Air - Direct Injection's Enemy  
*Don Hanson, Clear Creek Associates*

Evaluation of a sequencing batch reactor / sand filtration for the treatment of produced water  
*Emily Nicholas, Colorado School of Mines*

Expansion of the City of Los Angeles' Terminal Island Advanced Water Purification Facility: Completing the First Design/Build Potable Water Reuse Facility

*Adam Zacheis, Carollo Engineers*

**High Recovery RO-Challenges to Meet Stringent Nitrogen Limits in IPR via SWA Projects**

*Ufuk Erdal, AECOM*

**Impacts of ozone dose and empty bed contact time on bulk organic removal and disinfection byproduct mitigation in ozone-biofiltration systems**

*Mayara Aquino, UNLV*

**Optimizing Aquifer Storage and Recovery (ASR) for Treated Effluent**

*Nathan Nutter, Carollo Engineers*

**Plasma Physics for High Throughput Water Reuse**

*Selman Mujovic, University of Michigan*

**Residual Sample Waste Irrigates Green Walls and Roof of New York City Chlorination Facility**

*Adam Jacoby, Mott MacDonald*

**Sustainable Water Initiative for Tomorrow: A Look At HRSD's Innovative Approach to Water Reuse**

*Tyler Nading, CH2M*

**Using Potable Reuse for Sustainability Solutions at SFO**

*Dustin Whyman, Carollo Engineers*

### Technical Poster Presentations

**A Decision-Making Framework for Understanding the Desire of a Decentralized Reuse Water Systems in Rural Alaskan Communities**

*Cara Lucas, University of Alaska, Anchorage*

**Analysis of AgNPs Stability on RO Membrane by Using a High-Velocity Hydraulic Abrasion System**

*Bingru Han, Arizona State University*

**Capture and Removal of Radioactive Cs from Water Using Bacterial Engineered Vesicle**

*Sepideh Hakim Elahi, Arizona State University*

**Comparative Inactivation of Viral P22 as a Surrogate of Human Adenovirus and E. coli using UV alone and Advanced Oxidation Processes**

*Samantha Cooper, Valentine Engineers/Arizona State University*

**Development of anti-adhesive spacers to reduce fouling and improve cleaning of reverse osmosis membrane modules**

*Douglas Rice, Arizona State University*

**Effect of Electropositive Media filtration on Membrane Fouling in Reverse Osmosis Treatment of Tertiary Wastewater**

*Francois Perreault, Arizona State University*

**Farmer Perceptions and Understanding of Irrigation Water from Nontraditional Sources**

*Mayhah Suri, University of Maryland*

**Predictive Design of Novel Desiccants for Atmospheric Water Capture through Monte Carlo Simulations**

*Anjali Mulchandani, Arizona State University*



