Aqua-Aerobic Systems’ expertise and years of experience in Biological Processes and Filtration Systems allows us to provide you with the most advanced treatment technologies at the lowest lifecycle cost. Aqua’s technologies meet or exceed the most stringent effluent requirements and are designed to accommodate changing effluent demands. Reuse quality effluent is among one of those demands and can be achieved with the following Aqua wastewater treatment technologies:

:: AquaExcel® BATCH REACTOR
- Offers advanced nutrient removal in a single unit process prior to tertiary filtration or microfiltration.

:: Aqua-Aerobic® MBR MEMBRANE BIOREACTOR
- Provides enhanced biological nutrient removal via time-managed sequential aeration in a compact footprint.
- Direct filtration of MLSS with PURON™ submerged membranes achieves solids removal to submicron levels.

:: AquaDisk®/AquaDiamond® CLOTH MEDIA FILTERS
- Aqua’s cloth media filters, featuring OptiFiber® cloth media, are ideal for reuse/recycle applications and offer added benefits of low backwash rates, less operator attention and maintenance, and a small footprint.

With disinfection, Aqua-Aerobic Systems’ technologies are specifically designed to achieve Arizona’s Class A+ Reclaimed Water requirements.

FOR MORE INFORMATION CONTACT:
41355 N. Desert Winds Dr. | Cave Creek, AZ 85331
Ph 480.488.3009 | Fax 480.488.2525
Email john@iessouthwest.com | Web www.iessouthwest.com
John Spielman | Ryan Spielman
Utility Service is the premier provider of professional water tank services:

- Maintains thousands of potable water tanks under full service asset management programs
- Delivers true sustainable solutions and peace of mind
- Provides site management services for antennas on existing and new tanks

A water quality management tool...
- Minimize organics
- Stabilize disinfectant residuals
- Eliminate thermal water stratification
- Maximize filter media efficiency
AZ WATER 2011

KACHINA NEWS
ARTICLE AND ADVERTISEMENT DEADLINES

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>DEADLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINTER</td>
<td>December 10</td>
</tr>
<tr>
<td>SPRING</td>
<td>March 10</td>
</tr>
<tr>
<td>SUMMER</td>
<td>June 10</td>
</tr>
<tr>
<td>FALL</td>
<td>September 10</td>
</tr>
</tbody>
</table>

ACCEPTABLE FORMATS INCLUDE high-resolution PDF files with fonts embedded, Adobe Illustrator 9.0 .eps files, .tif files, .jpg files, or Microsoft Word files. Include any high-resolution (300-dpi) photos or artwork used as either .tif or .jpg. Mail or e-mail all articles or advertisements to:

AZ WATER ASSOCIATION
1042 Willow Creek Road
A101-510
Prescott, AZ 86301
musegroup@aol.com
www.azwater.org

Publication of any article/comment herein does not constitute an endorsement by the AZ Water Association or staff.

(c) 2011 by the AZ Water Association
### Calendar of Events

#### August
- **3** Wastewater Operator Training  
  Multiple Locations  
  See flyer on page 9
- **27** Water For People  
  Southern Arizona Golf Classic  
  Omni Tucson National Golf Resort  
  Tucson, AZ  
  See flyer on page 13  
  Register at www.azwater.org

#### September
- **11-14** 26th Annual WateReuse Symposium  
  Sheraton Wild Horse Pass Resort  
  Phoenix, AZ  
  See flyer on page 44
- **27-29** 27th Annual Tri-State Seminar  
  Primm Valley Resort  
  Primm, NV  
  See brochure on pages 60-66  
  For more information:  
  www.tristateseminar.com

#### October
- **15-19** WEFTEC 2012  
  84th Annual Water Environment Federation  
  Technical Exhibition and Conference  
  Los Angeles Convention Center  
  Los Angeles, CA  
  See flyer on page 39

### Trivia Questions

**A.** What is the name of the song whose tune later became the basis of “The Star-Spangled Banner”? Words were written by Francis Scott Key during the the 1814 Battle of Fort McHenry.

**B.** The Peace Corps was founded in 19__ by President John F. Kennedy?

**C.** “Grandma Moses” (Born [1860] Anna Mary Robertson; later married Thomas Moses) started painting at age 75 for a medical reason. What was the reason? Her paintings depicting old-timey rural life were first displayed in a local drug store’s front window – in 1938; when an art collector from NYC noticed her work. She eventually painted over 1600 works. She passed away in 1961 at the age of 101.

**D.** Where and when did the deadliest hurricane in U.S. history occur?

**E.** Date of the first women’s rights convention – held in Seneca Falls, NY?

**See Answers on Page 8**

---

See your ad here.  
Contact Deborah Muse  
for more information at  
888-559-8844
president report

IT IS A TRUE HONOR TO SERVE AS YOUR PRESIDENT OF THE PROFESSIONALS DEDICATED TO ARIZONA’S WATER...AZ WATER ASSOCIATION. To kick off the new water season, let us share a challenge. We need to challenge ourselves to sell what we do every day. Each of us has a network of contacts. Some contacts are people we know, and others are complete strangers.

Several years ago, I was fortunate to be involved in a youth theatre group for many years. There were no other water professionals in this theatre group. Many of my theatre contacts were curious on what I did for a living. As so many of us are comfortable doing, at first, I started to answer by describing the general job duties. So for myself I explained that I was an engineer and worked with a team of people that prepared water and wastewater studies, plans, and specifications for construction projects. By the time I finished this explanation, I found the person confused and no longer curious. With time I changed my story to one that described the outcome of what was done every day, and tried to peak the curiosity of the person asking the question “What do you do for a living?”

My newly improved answer was that I am part of a group of dedicated professional that clean and move water. What a difference this message provides. Now the curiosity energy from my contact keeps asking more and more questions...where does the water come from...do we have enough water...is the water safe to drink...what is the best water to drink...are we drinking sewage water...and a host of other conversation starting questions.

We all have the opportunity to engage our families, friends, and complete strangers on the incredibly important job we are dedicated to perform every day, every hour, and every second. It is energizing that so many people do want to know about our water world. All we need to do is to answer the question in a manner that solicits many more questions.

Yesterday I was at lunch at a seafood restaurant and the waiter was very talkative and asked what I did for a living. I simply answered that I clean and move water. During the one hour lunch he came back at least five times and asked more questions about our water system.

So here is the challenge. When asked what you do for a living, please do not answer:
“Through the use of biology, chemistry and physics, I am part of a complex team that impounds, pumps, pipes, coagulates, separates, filters, disinfects, collects, settles, activates, returns, wastes, thickens, digests, dewatered, transports, disinfects again and then finally releases the water back to the environment for someone else to impound.”

Let’s challenge ourselves to tell people who we are. It is time for us to COME OUT OF THE FAUCET and to say that we are the water professionals who clean and move WATER.
L-R: Frank Tantone, Jason Vernon, John Warner, Patty Kennedy, Chuck Graf, Brandy Kelso, Tom Galeziwski, Teresa Smith-DeHesus, Kevin Conway, Michelle De Haan, John Bannen, Mark Martinez, Dan Lueder, Chris Hill, Jacqueline Shaw, Paul Kinshella

John Warner (L), passes the gavel to incoming president, Kevin Conway during the AZ Water Annual Business Meeting at the Annual Conference.

Ed McCormick (L), WEF Board Trustee, presents a plaque to John Warner in appreciation for serving as President for the Arizona Member Association of the Water Environment Federation.

Craig Woolard (L), AWWA Immediate Past President, presents a plaque to John Warner in appreciation for serving as Chair for the Arizona Section of the American Water Works Association.

2011 ANNUAL CONFERENCE & EXHIBITION COMMITTEES

ANNUAL CONFERENCE & EXHIBITION
Don Manthe, Chair

CONFERENCE PROGRAM TASK FORCE COMMITTEE
Tim Thomure, Chair

CONFERENCE PROGRAM TASK FORCE MEMBERS
Steve Acquafredda
Robin Bain
Kevin Chadwick
Dale Conover
Raymond Craft
Jim Curcio
Michelle De Haan
Sherrie Echarté
David Epperson
Seth Fronk
Dianne Frydrych
Janet Gallup
Katherine Hammer
Gretchen Hawkins
Darlene Helm
Robert Holland
Maureen Hymel
Lisa Jackson
Mark Jensen
Doug Kobrick
Don Manthe
John J. Masche
Kathy Mills
Deborah Muse
Alan O’Brien
Laurel Passantino
Sreeram Rengaraj
Fred Rouse
Richard Sacks
Fernando Sarmiento
Mike Simpson
Dawn Slaughter
Teresa Smith-DeHesus

David Snow
Tim Thomure
Steve Wedwick
James Wright
Jenny Zapan

REGISTRATION COMMITTEE
Cindy Martinez, Chair
Bradley Colby
Annette Duarte
Sherrie Echarté
Floyd Marsh

AUDIO VISUAL COMMITTEE
Mark Martinez, Chair
Rick Buck
Fred Bollinger

EXHIBITION COMMITTEE
Jason Vernon, Chair
Terry Hirshberg

EVENT COMMITTEES
Jay Bailey, Chair,
Golf Tournament
Vicki-Lynne Scott,
Chair,
Pre-Conference Reception
Teresa Smith-DeHesus,
Chair, Barbecue
Gary Smith, Photographer

VOLUNTEERS CRITICAL TO SUCCESSFUL CONFERENCE
Front & Center: Annette Duarte, L-R: Victor Perez, Rick Buck, Brad Colby, Debbie Muse, Cindy Martinez.

BOARD SERVICE AWARDS
Thank You...
Jack Bryck (2009-2011); Rick Buck (2009-2011); Floyd Marsh (2009-2011); Teresa Smith-DeHesus (2009–2011) Teresa will continue on the Board as Vice President.
WELL, WE HAD ANOTHER TERRIFIC ANNUAL CONFERENCE IN MAY. In my last report I introduced a new AWWA catch phrase: “Together We Are Stronger. Together We Are Smarter”. It appears AZ Water members agree, based on excellent attendance and participation at the conference. Craig Woolard, AWWA past president and the AWWA representative to our 2011 conference, was highly impressed with our conference format, technical content and social events. He and his wife Lisa, also in the water profession, shared high praise for the AZ Water Conference.

Resilience, innovation and adaption were key elements throughout ACE11, AWWA’s annual conference, held in Washington, D.C., June 12-16. A frequent topic of conversation during the conference was how water utilities are seeking to adapt to climate changes, economic pressures, new technologies and a changing workforce. More than 10,500 people came to Washington to discuss these issues and network with their counterparts across the world.

During ACE 11, I also attended a board special session on Saturday and a formal board meeting on Sunday prior to official opening of the conference on June 13. Just to give you an idea of what transpires at the meetings: The Saturday session provided AWWA activity updates and allowed discussion of action items that were voted on at the Sunday meeting. On Sunday three new President Elect candidates addressed the Board in hopes of being elected at the 2012 winter board meeting. They are Don Broussard, Jim Chaffee, and John Donahue. There was also a detailed Treasurer’s report, an Executive Director’s report, and discussion of their items of business. One such discussion item was the structure of the Life Member criteria, which I will report on in more detail in my next director’s report. I also attended a meeting of the Diversity and Member Inclusion Committee as one of its new members. AZ Water has tried to include diversity in all of its committees. By participating at the AWWA national level, I hope to assist in that goal.

Switching topics, here is a brief summary of some Regulatory/Legislative/WWA Standards activities as of early June:

CHEMICAL SECURITY BILL

The House Committee on Energy and Security was scheduled to begin markup on H.R. 908; full implementation of the Chemical Facility Anti-Terrorism Standards Act. There were expectations that amendments would be offered at markup to end the exemption that water and waste water systems currently have from the nation’s chemical security program. AWWA led a group of drinking water associations in sending a joint letter to the committee urging that chemical security for water systems not be added to H.R. 908.

BILL INTRODUCED TO BAR SOME DRINKING WATER RULES FOR SMALL SYSTEMS

Sen. James Inhofe, R-Okla., has introduced a bill that would prevent EPA from enforcing drinking water rules for systems serving less than 10,000 people unless the agency ensures that all such systems have received sufficient funds to comply.

Under the bill, the agency would have to give a higher priority to providing assistance for compliance with rules for disinfection and disinfection byproducts, arsenic, and ground water.

CHROMIUM/LEAD SERVICE LINE RECOMMENDATIONS

AWWA provided input to EPA on Hexavalent Chromium and recommended more science on lead service lines. Regarding Cr-6 AWWA made the following key points:

- The IRIS process (the basis for EPS’s risk assessment) for hexavalent chromium should be based on the best available science.
- EPA should consider the data being developed by the ToxStrategies study effort (FYI-this is a group of studies being funded through the American Chemistry Council; the results to date contradict several of the default assumptions, such as a linear dose-response in EPA’s risk assessment and...
Water Treatment Operator Training—
Expand Your Career With AWWA

If you or anyone you know needs to learn the basics of the water industry and the basic functions and responsibilities of a Level 1 operator, this online instructor-led 10-week course is the answer! Already have the skills of a Level 1 operator? Then take our NEW Level 2 and Level 3 10-week courses.

Register now, limited space.

Level 1
January 28–April 18, 2011
April 22–July 1, 2011
October 7–December 16, 2011

Level 2
April 22–July 1, 2011
July 15–September 23, 2011
October 7–December 16, 2011

Level 3
October 7–December 16, 2011

This Operator Level I 10-week course introduces water operations personnel to the industry and educates them in the basic functions and responsibilities of Level 1 operator at most water treatment plants. The course includes a complimentary set of our best-selling water supply operations books. Students will complete a minimum of 6 hours of online learning activities each week, including activities such as presentations, videos, quizzes, weekly tests, homework assignments, may be eligible for 6 CEUS after the successful completion of this course.

To learn more and register for these courses, visit www.awwa.org/elearning/WTOCP or call 1.800.926.7337.
AZ WATER HAS JUST COMPLETED A VERY SUCCESSFUL YEAR THANKS TO JOHN WARNER AND HIS SELF-PROCLAIMED “REIGN OF TERROR”. John now gets to join a long list of Past (Dead) Presidents. He will be working as the Chair of the 2012 AZ Water Annual Conference. If you want to find a fun and rewarding way to contribute to your Association, join the Annual Conference Program Task Force Committee. There is a core group of very dedicated talented people who put this conference together and they have a great time doing it. John’s challenge is to match the efforts that Don Manthe and his conference committee put forth at our recent annual conference May 4-6, 2011. I encourage you to contact John Warner at john.warner@wwm.pima.gov.

WEFMAX
Each year the Water Environment Federation holds four WEFMAX meetings. These meetings are to facilitate information exchange between the Member Associations (MAs) that attend any given WEFMAX. It also allows WEF leadership and staff to communicate new programs to the MAs. WEFMAX was two very busy days in Vancouver, British Columbia this year. The host MA was the British Columbia Water and Waste Association. They did a great job and made the event very productive for all involved.

The MAs that were in attendance each presented successful programs and detailed what factors lead to the success. A summary of each WEFMAX meeting is available on the WEF website at http://www.wef.org/Members/page.aspx?id=201&ekmensel=c57dfa7b_95_0_201_4. You can also get to the site by going to www.wef.org and selecting the members hot key at the top left, select the Members Association Resource Center on the second line – then select the WEFMAX meetings at the upper left hand side. Other MAs have found ways to be successful in serving their members and our committees can get great ideas to try here in Arizona.

Your AZ Water delegation discussed our website and the success of our annual conference (which included the tour of the Cardinals stadium and our indoor barbecue). We also pointed out that in Arizona we have one combined WEF-AWWA organization and the strength it brings to our industry.

AZ Water will host one of the four WEFMAX meetings next year, March 8-9, 2012. If you are interested in participating, contact our president Kevin Conway or myself. This should be great weather for people from outside of Arizona and encourage them to travel to our great state.

IT IS ALL CONNECTED
The last time we had big fires, the water quality in the Salt River Reservoirs changed for the worse. The average Total Organic Carbon (TOC) went from about 3 mg/l to about 5 mg/l. This deterioration of water quality greatly increased treatment requirements to meet EPA rules. This caused rate increases for the customers. If money goes into one program in cannot go into others. The extent of the fires we are now experiencing in our watershed has a very good chance of causing another increase TOC. This will again demand more resources (dollars) for the Utilities that get the water supply from the Salt River system. We lose not only a great natural resource of our forests but also in the capital available to maintain, operate and otherwise improve our water systems. It is all connected.

Have a great summer. Hope to see you all at WEFTEC in Los Angeles - October 15 through the 19.

TRIVIA ANSWERS
(FROM THE ARIZONA HISTORIAN ON PAGE 3)

A. “To Anacreon in Heaven”.
B. 1961.
C. Arthritis – which no longer allowed her to do needlework.
D. Galveston, TX on 8 Sept 1900. More than 6000 of Galveston’s then 37,000 population died as a result of that storm.
E. July 19-20, 1848. It would be another 72 years before the 19th Amendment gave women the vote.
Wastewater Operator Training

*** This Operator training class is being provided at no charge ***

Offered by: The Arizona Department of Health Services in cooperation with the AZ Water Association, the Arizona Department of Environmental Quality and the Rural Water Association of Arizona

Date: August 3, 2011

Where: 24 Different Locations (Phoenix, Alpine, Miami, Chandler, Casa Grande, Florence, Kingman, Prescott, Safford, Sierra Vista, Yuma, Cottonwood, Flagstaff, Maricopa, Payson, Rio Rico, Page, Tonopah, Tucson, Munds Parks, Quartzsite, Show Low, and Gila Bend)

Up to 6.5 PDHs will be offered for completion of the training (partial PDHs may be given).

This training is designed to provide an overview, selected demonstrations (field and in the lab), and discussion of the 6 methods (pH, temperature, dissolved oxygen, turbidity, specific conductivity and ultra low level total residual chlorine) that are required to be performed at the wastewater treatment plant. This is geared towards meeting the compliance requirements for all AZPDES, APP and Reuse permits for ADEQ.

Please note: Due to potential space limitations and to assure all have access, only 1 registration from each organization will be confirmed, until all interested parties have had the opportunity to register. Others are encouraged to register, but will be placed on a waiting list on a 1st come-1st served basis. They will be notified by email after the registration closes.

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 8:15</td>
<td>Welcome and History</td>
<td>Steve Baker, ADHS</td>
</tr>
<tr>
<td>8:15 – 9:15</td>
<td>QA/QC for Exempt Methods</td>
<td>Steve Baker, ADHS</td>
</tr>
<tr>
<td></td>
<td>- Permit language</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- DMR-QA</td>
<td></td>
</tr>
<tr>
<td>9:15 – 9:30</td>
<td>Break</td>
<td>Gary Shipley, ADHS</td>
</tr>
<tr>
<td>9:30 – 9:50</td>
<td>Temperature</td>
<td>Gary Shipley, ADHS</td>
</tr>
<tr>
<td>9:50 – 10:10</td>
<td>DO</td>
<td>Kathryn Wangness, ADHS</td>
</tr>
<tr>
<td>10:10 – 11:10</td>
<td>pH</td>
<td>Kathryn Wangness, ADHS</td>
</tr>
<tr>
<td>11:10 – 11:30</td>
<td>Wastewater Operator Website</td>
<td>Kathryn Wangness, ADHS</td>
</tr>
<tr>
<td>11:30 – 12:30</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>12:30 – 1:15</td>
<td>Ultra Low Level TRC</td>
<td>Steve Wortendyke, HACH</td>
</tr>
<tr>
<td>1:15 – 1:45</td>
<td>MDLs and LiDOCs</td>
<td>Isaac Robert, ADHS</td>
</tr>
<tr>
<td>1:45 – 2:00</td>
<td>Break</td>
<td>Gary Shipley, ADHS</td>
</tr>
<tr>
<td>2:00 – 2:30</td>
<td>Conductivity</td>
<td>Gary Shipley, ADHS</td>
</tr>
<tr>
<td>2:30 – 3:00</td>
<td>Turbidity</td>
<td>Gary Shipley, ADHS</td>
</tr>
<tr>
<td></td>
<td>- In-line</td>
<td>Isaac Robert, ADHS</td>
</tr>
<tr>
<td></td>
<td>- In-Lab</td>
<td></td>
</tr>
<tr>
<td>3:00 – 3:15</td>
<td>Report of Findings and Responses</td>
<td>Steve Baker, ADHS</td>
</tr>
<tr>
<td>3:15 – 3:30</td>
<td>Final Words</td>
<td>Steve Baker, ADHS</td>
</tr>
</tbody>
</table>

There will be NO on-site registration. Registration deadline is July 15, 2011.

To Register: E-mail acharyp@azdhs.gov or call (480) 284-6869.

Directions and site information will be E-mailed prior to the workshop.
YOUNG PROFESSIONALS

Check the Young Professionals Committee’s webpage for upcoming Networking and Social Events at www.azwater.org/Committees/YoungProfessionals/Members/mission.aspx. If you are interested in participating in any event, being added to the YP mailing list or joining the YP Committee please email Neil Woodroffe at neil.woodroffe@stantec.com.

Stockholm Junior Water Prize

The Stockholm Junior Water Prize (SJWP) Regional Award certificates recognize water-related research projects amongst high school students. This April, recipients of the SJWP Regional Award submitted their research papers to the state competition. The Young Professionals would like to congratulate this year’s Arizona winner Alexandra Polasko from Notre Dame Preparatory High School.

To learn more about the Stockholm Junior Water Prize Competition go to http://www.sjwp.org/ or to sign up as an Arizona SJWP judge for next year, please contact Lisa Clifton at Lisa3120@aol.com.

Summertime Technical Lunch Series

The YP Summertime Technical Lunch Series will once again be returning in July! The technical luncheon series will be hosted at local firms throughout the Valley with industry experts presenting on a variety of topics geared toward Young Professionals. We are currently looking for more interesting topics and speakers for this year’s Technical Luncheon Series. If there are any topics that YOU would like to learn more about, please email Neil Woodroffe at neil.woodroffe@stantec.com. Please register online at www.azwater.org. Cost to attend is $5.

August Technical Lunch

“Tempe Town Lake Rubber Replacement Dam”
Presenter: Gary Brady from Stantec Consulting Services Inc.
Date: TBD
Location: Stantec Consulting Services Inc.

AZWARN/SECURITY COMMITTEE

Congratulations to the Town of Gilbert, who is the 18th member of AZWARN (Arizona Water and Wastewater Response Network)! The Town of Gilbert Utilities Department was active during the Steering Committee phase of AZWARN, so we are thrilled to have the utility and their leadership on board.

What is new at AZWARN? Quite a bit! For those who have not heard from us lately, there have been a number of EPA/ ADEQ/AZWARN sponsored training events, the composition of our by-laws, and continuing outreach.

Question of the Day: Who will be member number 19? 20? These members will initiate a new phase into the AZWARN organization, making it easier to organize, redirect, accept tasks and run the organization.

For more information on AZWARN, please go to our website at http://www.azwarn.org. The site has information on how to contact us, and on how to join AZWARN.

Most Committees take a summer break. Look for more reports in the Fall issue of the Kachina News.
Thank you participants and sponsors of the 5th Annual Water for People Volleyball Tournament & Cook-out!

1st Place Team: Here for Beer

2nd Place Team: Balls of Furry

3rd Place Team: TICO's

With your donations and participation we were able to generate awareness and over $1,500 for Water for People!
McCarthy Building Companies VP Appointed to Board of Directors for U.S. Veterans Organization

Frank Scopetti, vice president of Water and Mechanical Services at McCarthy Building Companies, has been appointed to the board of directors for the newly formed Elite Service-Disabled Veteran Owned Small Business Network - Arizona Chapter (Elite SDVOB-AZ).

In this role, Scopetti will assist the organization with business development, professional growth, and provide mentoring, guidance, and recommendations on legislative issues. He will also be integral in developing the business community involvement and supporting membership growth in Arizona.

The Elite SDVOB Network is a national veteran’s organization geared towards advancing the growth and commercial competitiveness of service-disabled veteran-owned business enterprises through education, services and legislation. The relatively new Arizona chapter represents a diverse group of contractors and business professionals created to assist veterans and service-disabled veterans operate self-sufficient businesses.

“Being a part of an organization that gives support to those who gave so much of themselves to our country is an incredibly enriching and meaningful experience for me,” Scopetti said. “I look forward to helping this network, which has chapters forming across the country, continue to grow and reach more U.S. Veterans.”

Scopetti is the vice president of Mechanical and Water Services with McCarthy Building Companies, and has professional and community affiliations with the AZ Water Association, Association for Construction Excellence, and served as the chairperson for the Design Assist Task Force-Services and Deliverables. The Scottsdale resident holds a bachelor of science degree in mechanical engineering from Pennsylvania State University as well as bachelor's degree in business administration from Indiana University of Pennsylvania.

Thank You from Charlotte Waddle

I want to thank everyone for their kind thoughts and prayers during my recent hospital stay and rehabilitation.

The Get Well cards I received from many of you cheered me so much! Your concern reflects the wonderful AZ Water attitude. It made me glad to be part of such an organization. Keep up the great volunteer/stewardship!

Corrections to Spring Kachina News

Tres Rios Environmental Restoration Project Phase II – In-Plant Secondary Effluent Pump Station (IPSEPS)

The above titled article in the last issue should have credited the contributions of Archer Western Contractors. Archer Western has continued the successful completion of the USACE and COP sponsored Tres Rios Flow Regulating Wetlands project with an equally diligent effort during construction of the Tres Rios IPSEPS project, which is on schedule for completion by the end of 2011.

Pipeline Error

Kachina News, Vol. 28, No. 2, Page 20, Column 1, Q5, and the answer on page 64: NOT “Calcium and Manganese,” but Calcium and Magnesium” contribute to hardness in water.

We explored every type of tank construction.

In the end, we discovered a NATGUN wire-wound prestressed concrete tank costs a lot less to own because the lifecycle analysis showed virtually zero maintenance. We looked at three other concrete manufacturers, but NATGUN won hands down. Their sales and engineering staff were extremely knowledgeable and very easy to work with.

Jay Howe
Utilities Director
City of Safford
Safford, Arizona

Want to see Jay’s NATGUN tank? Just log onto www.natgun.com/jay or call us at: 1-800-826-8306
Southern Arizona Golf Classic 2011
Saturday, August 27, 2011

Event Schedule:
Registration: 6:30 a.m.
Tee Off: 7:30 a.m. (sharp!)

OMNI TUCSON NATIONAL GOLF RESORT & SPA
2727 West Club Drive
Tucson, Arizona 85742

Online Registration at www.azwater.org
Questions? Contact Asia Philbin: asiantucson@yahoo.com, 520-661-1548

BOOK NOW TO ENSURE AVAILABILITY
OF SPONSOR PACKAGES.

PARTICIPATION OPPORTUNITIES
(please mark the appropriate box)

☐ CORPORATE SPONSOR - $10,000
   - Tournament logo on tee markers
   - Gold tee box for each player
   - 10 signed autographs of golfers
   - 10 one night stay at Omni Tucson

☐ PLATINUM SPONSOR - $5,000
   - Single-sided sign for practice round
   - Two one night stay at Omni Tucson
   - Logo on golf bags

☐ GOLD SPONSOR - $2,000
   - Promotions for your event
   - One practice round for your event
   - One night stay at Omni Tucson

☐ COPPER SPONSOR - $500
   - 10day entry to event
   - 10 practice round for your event
   - One night stay at Omni Tucson

☐ PARTICIPANT - $150
   - Registration entry per event

☐ I cannot participate, but enclosed is my contribution of $________

Contact Name: __________________________ Total Amount Enclosed $________
Company: __________________________________________
Address: ____________________________ State: ____ Zip: ______
Phone: ____________________________ Please bill me: ______

PLAYER REGISTRATION

PLAYER NO. 1
SHIRT SIZE: S M L XL XXL
NAME: __________________________ PHONE: __________________________
ADDRESS: CITY, ST, ZIP: __________________________
PLAYER NO. 2
SHIRT SIZE: S M L XL XXL
NAME: __________________________ PHONE: __________________________
ADDRESS: CITY, ST, ZIP: __________________________
PLAYER NO. 3
SHIRT SIZE: S M L XL XXL
NAME: __________________________ PHONE: __________________________
ADDRESS: CITY, ST, ZIP: __________________________
PLAYER NO. 4
SHIRT SIZE: S M L XL XXL
NAME: __________________________ PHONE: __________________________
ADDRESS: CITY, ST, ZIP: __________________________

Register online at www.azwater.org or mail entries to: Water For People Golf Classic 2011, P.O. Box 2021, Tucson, AZ 85702-2021  Questions? Contact asiantucson@yahoo.com, 520-661-1548
The far-reaching effect of this innovative process is astounding. We estimate that the Rayne of Phoenix facility saves 2.6 million gallons of water and 281 tons of salt from reaching the sewer from just their customers.

The AZ Water Association is recognizing Rayne of Phoenix for its work in developing its Zero Liquid Discharge (ZLD) Facility for Centralized Water Softening Regeneration this year. For its efforts, Rayne of Phoenix’s ZLD Facility was awarded the AZ Water 2011 Water Reuse Project of the Year. The Project of the Year Award is presented annually to recognize outstanding engineering excellence and achievement in the water, wastewater, and water reuse categories.

According to the United States Geological Survey (USGS)\(^1\), 89.3% of US homes have hard water. That makes hard water the single most widespread water problem in American homes today. Phoenix suffers from some of the hardest water in the nation. If left untreated, water hardness results in plumbing and appliance failure and waste, as well as excessive soap, detergent, chemical, energy, and water use.\(^2\)

**NATIONAL WATER HARDNESS LEVELS**

Due to the severe water hardness levels of the Phoenix Metro area, many homes use self regenerating water softening (SRWS) systems to remove the hardness to acceptable levels. These SRWS remove the hardness for a pre-determined volume of water until it no longer has capacity, and must be regenerated by flushing a salt brine solution through the exhausted tank. As a result, brine consisting of water, salt and hardness minerals is discharged into the sewer. In fact, a typical SRWS wastes up to 85 gallons of water and dumps up to 15 pounds of salt per cubic foot of resin in the softener into the sewer with every regeneration. Furthermore, many SRWS are undersized for the number of people in the house and water usage and not properly set to regenerate when the resin is exhausted, and as a result prematurely regenerate.

This self regenerating process, when taking place in tens of thousands of homes using SRWR in the Phoenix area, creates 450,000 tons of salt pollution and wastes nearly 2.7 billion gallons of water each year. This waste costs the utilities and their customers millions of dollars in water production, treatment and distribution. To see an animation of this process, go to www.RayneWater.com and click on the animation for “Eco-Friendly Soft Water” in the sidebar.

H. Martin Jessen, Vice President of Rayne Corporation explains, “To Rayne, the issue of water conservation is vital. We identified the need to develop cutting edge technologies to significantly reduce salt pollution and conserve precious water. As a result, we succeeded where no other company even bothered to try. Rayne was determined to take water softening to an unprecedented, environmentally-responsible level.”

Three years ago Rayne contracted with Eric Dole of Hydro Engineering Solutions L.L.C. and Dr. Wendell Ela of the University of Arizona Chemical and Environmental Engineering Department to help Rayne develop a system whereby no salt and very little water would go to the sewer. PE has been around for years but the manner of regeneration is what changed. Consumers could still enjoy the benefits of soft water, but instead of installing a SRWS that regenerates in the home, consumers could use Rayne’s Portable Exchange Tank Service. With a PE system, a Rayne technician delivers a fully-regenerated Soft Water Exchange Tank to the home and exchanges it as needed for a fee. This service provides the same benefits as a water softener, but uses no salt or water for regeneration in the home. Rather, resin regeneration takes place in a properly-designed and professionally-operated centralized ZLD regeneration facility operated by trained Rayne technicians. When Dr. Ela was asked about this process by the *Phoenix Business Journal* and in an article dated March 5, 2010 and he explained, “There is no question their system will work. It’s a new twist on an old technology.”\(^3\)

Eric Dole, Principal at Hydro Engineering Solutions, L.L.C. describes the implications of this project, “The far-reaching effect of this innovative process is astounding. We estimate that the Rayne of Phoenix facility saves 2.6 million gallons per year of water and 281 tons of salt from reaching the sewer from just their customers. Imagine what it could mean if every self regenerating softener was converted to a Rayne exchange tank? I am very proud to be part of this project and I am excited about what this means for the future of water treatment.”

Rayne regenerates 120 cubic feet of resin per batch at the Phoenix facility. The steps for the ZLD regeneration process are outlined as follows:
**STEP 1: SPENT RESIN TRANSFER**

The process begins when water is used to transfer 120 cubic feet of spent resin from tanks that are returned from the customer into the regeneration vessels. For this process, 890 gallons of water are used and 890 gallons of water are recycled.

**STEP 2: BACKWASHING**

Regeneration starts with backwashing the resin by upflowing water through the bed to clean it of any dirt or other solids. For this process, 1,650 gallons of water are used and 1,650 gallons of water are recycled. The process uses filtered, backwash/spent resin transfer water in a closed loop system with an occasional blowdown.

**STEP 3: BRINE RECOVERY**

For this process, 1,800 gallons of 13% saline water are used to “deliver the salt” needed to exchange the hardness minerals from the resin so that it is ready to soften water again. All 1,800 gallons of brine are processed and 1,500 gallons are reconstituted with the ZLD process thereby eliminating the discharge of salt to the sewer. This step diverts the high hardness and high salinity portions of spent brine to the patent-pending brine recovery process. This step recovers 100% of the treated brine.

**STEP 4: SOLID WASTE GENERATION**

The brine recovery process generates a solid that contains VERY high concentrations of magnesium and calcium in a “wet solid” containing approximately 300 gallons of water. This sludge can be used as a raw material or feedstock in many other markets such as whitening agents and cement production. The solids may also be safely disposed in any landfill. This further improves the quality of the water going to the drain because it permanently removes the hardness and TDS from the wastewater. These 300 gallons are the only water not recycled within the ZLD facility.

**STEP 5: INITIAL RINSE**

For this process, 1,400 gallons of water are used to reduce the salinity of the water left over in the regeneration vat from 13% to 1% salinity. All of this water is recycled. This step uses a patent-pending, rinse-reclaim system to process and treat the water for rinse reuse.

**STEP 6: FINAL RINSE**

For this process, 500 gallons of water are used and 400 gallons are recycled. This step diverts the low hardness and low salinity portions of the final rinse water to the rinse reclaim system.

**STEP 7: REGENERATED RESIN TRANSFER**

For this process, the 400 gallons of water are left over in the vat after the final Rinse and all 400 gallons are recycled. This process fills the PE tanks with regenerated resin for use in the customer’s home.

Rather than have the water softener regeneration process occur inefficiently in tens of thousands of homes every day in the Phoenix area, dumping high hardness salt brine into the sewer and wasting millions of gallons of water, the regeneration process could take place in a self-contained, closed loop system which separates the solids from the brine, reuses 93% of the water and achieves 98% salt reduction.

Rayne of Phoenix is proud to be partnered with AZ Water Association in the quest to preserve the quality and availability of our water. Rayne of Phoenix extends their gratitude of all of its partners for all of their hard work for the past three years; Eric Dole of Hydro Engineering Solutions, Dr. Wendell Ela of the University of Arizona, Kevin Alexander of Separation Processes Inc., David Morgan of Calsaway, and the City of Phoenix Water Department for WQ analysis.

---

1The USGS is responsible for collecting data on water quality and water supply throughout the nation.


THROUGH-OUT TIME, THE TRANSPORTATION INDUSTRY HAS PLAYED A VITAL ROLE IN THE EVOLUTIONARY DEVELOPMENT OF OUR WATER AND SEWER SYSTEMS. Without the development of these vehicles and the associated trailers, the construction machinery and the needed pipe would have been much more difficult, time-consuming and expensive to get to the job sites. Recently, I came upon some photos I had saved from a calendar published a few years back by the Reliance Trailers Company – now owned by Cozad. With their permission, I’ve included four photos of the early tractor-trailer units from the 1910s thru into the 1930s.

After having seen these photos, one has to remember that mankind started building water distribution and sewage conveyance facilities as far back as 3500 BCE using primarily “people power” only. As the years passed, the use of oxen and horse power (and carts/wagons) came into being, followed thereafter by steam power and the railroads. With the industrial age, came the ability to manufacture many different types of construction materials and pipe. If not for the invention of cranes to lift, load, and move these materials; and these trucks to haul them to the respective job sites, the water and sewer systems (many of which are still in beneficial service today – facilitating the good health and welfare we continue to enjoy) would not have come into existence near as soon as they did!

Once again, thank you the Cozad Company for their willingness to share their photos.
Local Strength and the International Resources of One of the World’s Largest Professional Services Firms

In Phoenix:
1 602 216 7200
In Flagstaff:
1 928 913 8300

www.ghd.com
AZ Water 2011 Wastewater Project of the Year
91st Avenue WWTP Unified Plant 2005 (UP05) Expansion Project B

To support and sustain economic expansion, the environment, along with public health and welfare, the Sub-Regional Operating Group (SROG) embarked on a multi-year phased expansion of the 91st Avenue Wastewater Treatment Plant (WWTP). The 91st Avenue WWTP is jointly owned by the SROG Cities of Glendale, Mesa, Phoenix, Scottsdale, and Tempe. The Unified Plant 2005 Expansion Program – Project B (UP05B) added 25.5-million gallons per day (mgd) of additional treatment capacity for a total plant capacity of 230 mgd, making it the largest WWTP plant in Arizona.

The UP05B project represents the SROG Cities' commitment to promote, plan, design, and serve their customers and communities through construction of one of the most efficient treatment facilities to promote growth, sustain industry, and provide life to our yards, parks, and agricultural areas. Working together on the UP05B Project, our team consisting of the City of Phoenix, as the lead agency for the facility; McCarthy Building Companies as the Construction Manager at Risk (CMAR); and Malcolm Pirnie - Water Division of ARCADIS, as the lead consultant and engineer of record for the design and construction phase services, created an informal partnering structure where multiple organizations came together to create a “one team focused approach” during both the design and construction phases of the project. Working closely, the team focused on the elimination of waste in the day to day project operations and on maximizing the team’s efficiency. This allowed Malcolm Pirnie, McCarthy, and the City to foster relationships with the team members of the project and create a culture of commitment, communication, trust, conflict resolution, continuous evaluation, and realistic expectations that were not only reflected in a partnering charter, but displayed every day, at every level of the organization, and became a part of how the team did business, day-in and day-out!

The 91st Avenue WWTP treats a sewershed roughly three quarters the size of Rhode Island and provides highly treated effluent for irrigation, wetlands riparian habitat of the Tres Rios Ecosystem Restoration and Flood Control Project and cooling water for the Palo Verde Nuclear Power Plant. The UP05B project’s service and community focus is not merely as a single entity, but as an organization consisting of several municipalities, the communities they serve, and the local communities surrounding the facility. As such, the SROG cities, as well as subsequent end users of the water the project produces, were dependent upon our Team’s expertise to solve the challenges of the UP05B project to deliver not only a quality project, but to produce a quality of effluent water instrumental to the improvement of life in the region and to meet the region’s growing water demand.

To respond to this challenge our Team applied project management techniques in innovative ways to enable the efficient use of the CMAR delivery method and met key construction challenges utilizing and innovating existing technologies which will provide value to the industry in future projects, including:

- Successful project partnering to establish a “true” project team
- Creative design process tools and methods (focused productivity workshops)
- Innovative lessons learned program
- Innovative approaches to construction

Innovative approach to project delivery via project partnering to establish a “true” project team. Our Team developed a true collaborative environment through an innovative approach to project partnering and the establishment of a true project team, beginning with the design phase and continuing through the construction and startup phases of the project. A Team Charter with a mission statement and team goals was developed and updated throughout the life of the project. Regular meetings were held with the Team to review our goals and address any potential issues. The creation of a “one team focused approach” was reached.
Creative design process tools and methods. Our team initiated productivity workshops that helped to understand the potential impacts of delayed shop drawing reviews, timely Request For Information (RFI) responses, as well as the scheduling and phasing of construction work. This approach helped to improve focus on the overall efficiency of the Team and led to a reduction in the construction cost and schedule.

Innovative lessons learned program. The Team initiated a program to capture and implement changes to the project and CMAR delivery method based on lessons learned from previous projects. Lessons Learned sessions were held with the Contractor, Client, and Engineer to bring these opportunities to our UP05B Project. This collaborative approach allowed us to design and construct a project that was completed on-time, under budget (CIP budget was returned to SROG) and had no claims. Using CMAR to deliver this $105M project resulted in extra value to the client via implementation of additional scope within an established project budget that may not been accomplished otherwise.

Innovative Approaches To Construction. The SROG Cities, Palo Verde Nuclear Power Plant, U.S. Army Corps of Engineers, West Valley businesses, and residences were dependent upon the expertise of this team to solve the complex challenges of the UP05B project, including collaborating with the numerous stakeholders, developing a temporary diversion for excavation, and designing cast in place odor control facility and circular concrete clarifiers.

- **Temporary Diversion for Excavation.** Excavating deep structures close to the Salt River comes with unique challenges. Our team developed a plan to install localized temporary wells and build a temporary French Drain system that diverted the water away from the excavation. By working together with a collaborative “one Team” approach, we were able to focus on a solution to the problem. This solution to an unusual condition minimized the overall schedule and cost impact.

- **Cast in Place Odor Control Facility.** In order to maximize the schedule, our Team successfully completed the cast in place Odor Control Facility in one continuous concrete pour. Through a redesign of the Odor Control Facility’s fiberglass reinforced plastic sleeves the forming system was able to be installed as a complete panelized system to allow for the single pour and allow the Team to eliminate construction joints that may have led to leakage. In all, the 193 yard concrete pour lasted 5.5 hours. By utilizing early planning and coordination, and following through with these concepts during installation, the final product was greatly enhanced.

- **Circular Concrete Clarifiers.** Our Team developed a plan and a concrete screed to pour the slab in such tight tolerances that the grout topping included as part of the original design was not required. In the end, all four circular clarifiers with diameters of 160 feet to 200 feet were successfully poured in this manner.

- **MOPO Coordination for Complex Project.** The unique complexity generated by the design and construction of a facility of this size that must work incredibly well by itself, while being integrated into an existing operational facility at the same time was a challenge. The team successfully completed over 100 MOPOs and a record 27 MOPOs in a 10-hour period at the 91st Avenue Wastewater Treatment Plant. SROG was able to save hundreds of man hours and thousands of dollars on the UP05B project by avoiding future shutdowns and diversions.

The UP05B project represents a true partnering approach, led by all parties (Client, Contractor and Engineer), and was key to the project’s success.

“The success of this partnership resulted in a well executed project, completed ahead of schedule, under budget, while achieving the SROG member requirements, meeting foreseeable regulatory mandates and the projects goals – an unprecedented result for a project of this magnitude.”

Rick Shane
Project Manager,
City of Phoenix

City of Phoenix, Malcolm Pirnie a Division of ARCADIS, McCarthy Building Company
APG-Neuros introduces efficient and affordable advanced technology blowers, blower packages, and complete aeration systems for municipal and industrial applications.

The NX series are on a different level: As of August 2010, APG-Neuros is confirmed as the market leader in the High Speed Turbo Blower category in North America, with over 300 units installed, and over 150 on order. The oldest unit is reaching four years, with over 30,000 hours of continuous operation, in an outdoor installation at a Waste Water Treatment Facility.

Compared to old technology, the NX series can save over 30% in operating costs, saving time and money. Our competitive advantage is superior quality, efficiency, performance, and UL, CSA, and CE certifications.

APG-Neuros produces their NX Series blowers in the USA. A second production facility is scheduled to be completed by the end of May, in Québec, Canada. This facility will also serve as the head office, housing our engineering and sales functions, and senior management.

Contact your local representative:
Kate Flanagan, Dave Redman, Dennis Emrie
1620 W. Drake Drive #105
Tempe, AZ 85283
Tel: 480 940-6823
Fax: 480 940-6935

Proudly made in the USA

Production Facility
APG-Neuros Inc.
160 Banker Road
Plattsburgh, NY, 12901, USA
Tel: 518-324-4150
Fax: 518-324-415
SUCCESSION PLANNING
AN URGENT ISSUE

As a prior AWWA National Director for the Arizona Section, I have written several articles on the need for Succession Planning in the Water Sector that were published in the AZ Water Kachina News. I would like to argue that the need for succession planning is increasing and has become an urgent matter that must be addressed.

Let's first consider some factual data. A national study conducted by the Water Environment Research Foundation over five years ago reported that the average worker age in a water sector utility is 45 and projects that about 35 percent of the water sector work force will retire in the next ten years. More recent studies indicate that the workforce continues to age and project an accelerated retirement during the next five years. These retirements will result in a loss of years of utility knowledge and expertise that will be difficult to replace if not addressed in an organized and logical manner. For example, Pima County Regional Wastewater Reclamation Department anticipates to lose approximately 30 percent of its 546 employees (approximately 160 employees) over the next five years to retirement.

But retirements are only part of the story today. Of late, largely due to the nation’s economic crisis, public water sector utilities have come under enormous pressure to maintain or reduce their budgets. This pressure coming at a time when costs for regulatory compliance, infrastructure rehabilitation and operating costs (such as electricity, and chemical costs) are increasing. As a result the water sector work force is experiencing a higher rate of attrition than traditionally due to layoffs, elimination of vacancies, inability to advance, unpaid time-off (furloughs), years of no salary increases and reduction in benefits. Some of these variables are enticing the aging work force to retire sooner than they had originally planned.

Fortunately, there are ways to reverse these trends while continuing to provide the high quality cost effective services the public demands of us. More organized succession planning programs can be implemented in various degrees that can be as simple as assigning normally younger less skilled employees to more skilled senior employees who can transfer their skills through on-the-job training during the course of performing their normal job duties. More formal succession planning can be achieved by utilities that implement career development programs. Such programs can result in a more highly skilled and reduced work force while providing an incentive for employees to develop in a career program that encourages them to stay with the utility. As an example, at the Pima County Regional Wastewater Reclamation Department, we implemented a multi-skill operations and maintenance career development program that provides training to employees in various ascending skill-blocks. Once the employee demonstrated their proficiency in a particular skill-block they receive an automatic salary increase. While working in a specific skill-block, the employee can proceed with training for proficiency in another skill-block and a career path of demonstrating proficiency in other skill-blocks with resulting automatic increases in salary. The multi-skill O&M career development program is resulting in a more highly skilled motivated work force that is working smarter (not harder). The program to date has reduced O&M costs, primarily by eliminating vacancies of traditional silo-type positions and has reduced the O&M budget by over a million dollars to date.

It is obvious that proper training is key to the success of succession planning and career development programs. In today's stressful economic times, it is usually difficult for utilities to gear up and provide training programs that can be cost effective and achieve quick success. Cost effective highly efficient programs however are offered locally by the AZ Water Association. Training opportunities through AZ Water include technical workshops, webcasts, conferences, tours, committee participation, among others. In addition, AZ Water’s parent associations, the American Water Works Association and the Water Environment Federation have partnered to create a web-based program called “Work for Water” that enhances the image of water careers and attracts job seekers to the water sector. Visit the website at www.workforwater.org. Having younger employees assigned to more skilled senior employees and having employees participate in professional association training programs will provide an additional benefit, such as succession planning at the professional association itself. These associations (AZ Water for example) will greatly benefit from engaging new, capable individuals who will have the opportunity to become the leaders of the water professional community in the future.

Proper training is key to the success of succession planning and career development programs.

Michael GRITZUK, P.E.

CM @ Risk Contract O & M Arsenic Removal Design Build
928-778-5335 708 Corsair Avenue, Suite A, Prescott, AZ 86301 928-778-5870
THE PIPELINE
Operator Certification Challenge
SEE ANSWERS ON PAGE 68

WATER TREATMENT GRADES 1 & 2
1. Which of the following disinfectants of drinking water has residuals that do not last in distribution systems?
   A. Chlorine Dioxide
   B. Chlorine
   C. Ozone
   D. Chloramines

2. How many gallons are contained in a basin that measures 80 feet long, 32 feet wide, and is 12 feet deep?
   A. 230,000 Gal
   B. 112,000 Gal
   C. 65,500 Gal
   D. 30,720 Gal

3. What was the dosage in mg/L of 48% aluminum sulfate (alum) solution weighing 11.1 pounds per gallon fed in a 30 day month if the alum usage is 1,200 gallons and the average water production is 2.5 million gallons per day?
   A. 10.2 Mg/L
   B. 12.5 Mg/L
   C. 50.0 Mg/L
   D. 102 Mg/L

4. If a filter operates at an average of 833 gallons per minute, how many million gallons (M.G.) will it produce in 72 hours?
   A. 1.2 M.G.
   B. 1.5 M.G.
   C. 2.4 M.G.
   D. 3.6 M.G.

5. What are two of the most common compounds contributing to taste and odor problems in surface water?
   A. Calcium and Magnesium
   B. Iron and Manganese
   C. Methylisoborneol and Geosmin
   D. Fluoride and Trihalomethanes

WATER TREATMENT GRADES 3 AND 4
1. If source water has 0.3 mg/L Fluoride and a residual of 0.7 mg/L is desired, how many pounds per day (ppd) of 24% Hydrofluorosilicic Acid weighing 11 pounds per gallon are required to be added to a production averaging 32 Million Gallons per Day (MGD)?
   A. 40 ppd
   B. 80 ppd
   C. 160 ppd
   D. 320 ppd

2. At what pH does chemical precipitation normally occur?
   A. Below 4.0
   B. Between 5.0 and 6.0
   C. At 8.3
   D. Above 10.0

3. How many Gallons of water are in a pipe that is 3.0 feet in diameter and is 600 feet long?
   A. 10,000 Gal
   B. 18,500 Gal
   C. 31,700 Gal
   D. 83,400 Gal

4. What is the water pressure in pounds per square inch (psi) on a hydrant when the water level in a nearby elevated reservoir is 186 feet above the hydrant?
   A. 18.5 psi
   B. 50.0 psi
   C. 80.5 psi
   D. 186 psi

5. Which of the following disinfection chemicals produce the active ingredient Hypochlorous Acid in drinking water?
   A. Chlorine gas
   B. Sodium Hypochlorite
   C. Calcium Hypochlorite
   D. All the above.

WATER DISTRIBUTION GRADES 3 & 4
1. How many gallons per day (gpd) of Sodium Hypochlorite are needed to disinfect 17 Million Gallons per Day (MGD) of water at a dose of 3.2 mg/L? Assume the Sodium Hypochlorite solution is 12.5% active chlorine and weighs 10.5 pounds per gallon?
   A. 100 gpd
   B. 125 gpd
   C. 345 gpd
   D. 454 gpd

2. While flushing an 8” main in a distribution system, if a velocity of 5 feet per second (fps) is desired, what should the discharge rate be in Gallons Per Minute (GPM) from a fire hydrant?
   A. 200 GPM
   B. 505 GPM
   C. 783 GPM
   D. 1,000 GPM

3. How much Sodium Hypochlorite must be added to a reservoir that holds 15 Million Gallons to disinfect it to 35 mg/L free chlorine? Presume the Sodium Hypochlorite contains 1.0 pound of active chlorine per gallon.
   A. 8,340 Gal
   B. 4,380 Gal
   C. 2,000 Gal
   D. 1,040 Gal
4. Which of the following is a treatment technique to prevent excessive leaching under the Lead and Copper Rule?
   A. Maintain disinfectant level above 4.0 mg/L.
   B. Switch from free chlorine to combined chlorine.
   C. Add 2.0 mg/L Fluoride to the water.
   D. Maintain a positive Langelier Index.

5. What is a water system’s annual usage of water in Million Gallons (MG) if the average production is 6,950 Gallons per Minute (GPM)?
   A. 5.2 MG
   B. 365 MG
   C. 1,898 MG
   D. 3,650 MG

WASTEWATER COLLECTION GRADES 1 & 2
1. Leakage should not be a problem in:
   A. Areas with high groundwater tables.
   B. Pipes with rigid joints.
   C. Properly constructed and maintained sewers.
   D. Sewers with roots that plug all cracks and holes.

2. Storm water runoff is conveyed to a wastewater treatment plant.
   A. True
   B. False

3. If a wastewater gravity pipe has a slope of 2.5% and the upstream invert is 1525.0 feet above sea level, what will the downstream invert be 400 feet away?
   A. 1535 feet
   B. 1524.5 feet
   C. 1515 feet
   D. 1485 feet

4. Be sure to notify the operator at the downstream wastewater treatment plant before clearing a large septic stoppage.
   A. True
   B. False

5. Which of the following chemicals may be used in wastewater lift stations to prevent the wastewater from turning septic?
   A. Ozone
   B. Copper Sulfate
   C. Sodium Chloride
   D. Hydrogen Peroxide

WASTEWATER COLLECTION GRADES 3 & 4
1. What may be used to release air from an over-pressurized wastewater force main?
   A. Air pumps
   B. Check valves
   C. Suction pumps
   D. Air relief valves

2. What is the production in Million Gallons per Day (MGD) of a lift station that pumps 1,282 Gallons Per Minute (GPM) steady for an average of 13 hours per day?
   A. 1.0 MGD
   B. 1.5 MGD
   C. 2.6 MGD
   D. 3.7 MGD

3. A wastewater line is 36 inches in diameter and 800 feet long. How many gallons of wastewater can it hold?
   A. 1,800 Gal
   B. 31,000 Gal
   C. 42,300 Gal
   D. 86,000 Gal

4. What is the most common type of pump used in wastewater lift stations?
   A. Vertical turbine pumps
   B. Archimedes Screw pumps
   C. Diaphragm pumps
   D. Centrifugal pumps

5. Exfiltration causes and increase in wastewater flows to treatment plants.
   A. True
   B. False

WASTEWATER TREATMENT GRADES 1 & 2
1. A little organic matter in the settled grit usually indicates that proper velocities are being maintained in the grit channel.
   A. True
   B. False

2. What is the capacity of a basin in Gallons that is 85 feet long, 38 feet wide, and holds 15 feet of wastewater?
   A. 155,325 Gal
   B. 228,400 Gal
   C. 362,400 Gal
   D. 450,000 Gal

3. Primary clarifier effluent is the same as trickling filter influent in some wastewater treatment plants.
   A. True
   B. False

4. What is the organic loading in pounds per day (PPD) of a sedimentation basin that is treating 4.4 MGD of wastewater that contains 224 mg/L BOD?
   A. 540 ppd
   B. 2,750 ppd
   C. 4996 ppd
   D. 8,220 ppd

5. If a wastewater treatment facility has an influent suspended solids of 250 mg/L and an effluent suspended solids of 19 mg/L, what is the removal efficiency in percent (%)?
   A. 67 %
   B. 87 %
   C. 92 %
   D. 95 %

WASTEWATER TREATMENT GRADES 3 & 4
1. Microorganism identification and enumeration can be used to determine when process changes should be made before effluent quality deteriorates.
   A. True
   B. False

2. What is the Biochemical Oxygen Demand (BOD) loading to a wastewater treatment plant in pounds per day (ppd) when the influent BOD is 350 mg/L and the volume treated is 14.2 MGD?
   A. 14,200 ppd
   B. 24,000 ppd
   C. 41,450 ppd
   D. 65,000 ppd

3. Power couplings between driver and driven parts of a machine should be:
   A. Kept in alignment.
   B. Kept in a sealed condition.
   C. Periodically dried out.
   D. Periodically refaced.

4. What is the Mean Cell Residence Time for an activated sludge plant with Suspended Solids (SS) of 15,000 pounds, solids wasted of 2,200 pounds per day, and 240 pounds per day SS in the effluent?
   A. 5.5 days
   B. 6.1 days
   C. 8.5 days
   D. 9.9 days

5. What is the surface organic loading to a sedimentation basin in pounds per day per square foot (ppdpsf) if 4.5 Million Gallons per Day (MGD) of wastewater with 275 mg/L BOD flow through a basin measuring 48 feet in diameter?
   A. I don’t know. Ask a chemist.
   B. Only the Superintendent knows.
   C. Ask the secretary. She knows everything.
   D. ADEQ has all that stuff on file.

E. Email your answer to Ted Bailey: baileytb@att.net

BY TED BAILEY
BAILEYTB@ATT.NET
BACKGROUND:
The Deer Valley Water Treatment Plant (WTP) - East Basins Reconstruction Project, in operation since February 2011 was constructed by the City of Phoenix at a projected budget of $120 Million Dollars. This project demonstrates the City's quick response to the growing infrastructure needs with dynamic and robust solutions. Challenges presented by stringent water quality regulations are also taken into consideration when the City adds or modifies their water treatment plant infrastructure. Additionally the City uses alternate project-delivery methods to ensure tight deadlines are met. The Deer Valley WTP presented an unique problem few years ago when the plant staff observed cracks developing in the concrete structures of the east treatment train. The City initiated extensive geotechnical investigation by a design team headed by Wilson Engineers. The geotechnical investigation revealed the presence of a soft soil plume ranging from seven feet to twenty five feet in depth below structures. Temporary measures were taken to stabilize the structures while a permanent solution was being investigated. Several options were considered for constructing the WTP in the same footprint. Based on constructability as well as economics, the City decided to augment the native material with cement and replace the entire footprint with cement soil alluvium (CSA) to eliminate any future issues with settling.

The Deer Valley WTP was built in the 1960s. Due to the promulgation of the Stage 2 Disinfection/Disinfection By-Products (D/DBP) Rule in 2012 along with settling of basins, the City decided to demolish the east treatment train, which was rated at 75 MGD production. In its place, a brand new facility rated at 100 MGD with the latest technologies capable of meeting current stringent drinking water requirements was designed and built. The timeline coincided with the publication of the City’s Water Quality Master Plan (WQMP) Update which indicated that the Deer Valley WTP needed to produce 100 MGD to meet system wide demand. Treatment train options for the new East Basins at Deer Valley were also based on recommendations from the WQMP Update.

DESIGN PHASE:
The City selected a robust treatment process that would help meet two important goals – increased capacity and advanced treatment to meet new regulatory guidelines. The process train finalized for the Deer Valley WTP – East Basins project included Pre-sedimentation Basins (PSB), Rapid Mix Basins (RMB), Sand Ballasted Flocculation (SBF) and GAC Filter Adsorbers (GAC FA).

The SBF process at the heart of the plant was chosen due to its durability when faced with large fluctuations in source water turbidity. This was a very important consideration for the City since the source water quality (Arizona Canal operated by SRP) changes based on the composition of available water (from Salt River, Verde River and ground water).

City of Phoenix is one of the leading pioneers in the Southwest in its use of the latest water treatment technologies for the production of high quality drinking water that far exceeds any current regulatory mandates. Keeping with this tradition and incorporating it’s other goal of producing more water per square foot, the Deer Valley WTP incorporated the SBF process into the treatment train. Polymer and sand are two key elements of the SBF process. They allow the process to overcome source water quality fluctuations with minor dosage adjustments.

The polymer assists in the attachment of agglomerated floc to sand particles which assists in the settling of the floc particles. The inherent sand loss in this system is replenished from an on-site sand storage and feed facility. The use of sand and clarifier at the end of the SBF process significantly decreases the detention time required for sedimentation/flocculation from three hours in conventional treatment to a maximum of twenty minutes at design capacity. A decrease in detention time is proportional to a decrease in footprint.

The GAC FA function as a filter for particulate removal and as an adsorber for organics removal to help reduce the distribution system Total Trihalomethanes (TTHMs). The use of GAC in the process requires use of alternate pre-oxidants in lieu of chlorine since chlorine is known to deplete GAC adsorption sites that adsorb organics. Chlorine is also a known precursor for TTHM formation and would contradict the City’s overall philosophy on TTHM reduction. After evaluation of alternatives, the City selected Chlorine Dioxide as the preferred pre-oxidant.

The project also incorporated monitoring various water quality parameters along the entire treatment train and not just the...
finished water. The continuous online monitoring from raw water to finished water provided the operational staff with enough reaction time to adjust the process in the event of a mechanical or electrical failure and considerably minimize any operational disruptions. Some of these events were tested by coincidence during the testing and commissioning phases of the project.

**CONSTRUCTION PHASE:**
In order to fulfill the City’s desire to comply with the Stage 2 D/DBP rule, as well as to meet the City-wide water demand by the summer of 2011, the project team was tasked with an aggressive schedule. The schedule dictated the need for out of the box thinking in the delivery of design documents. This resulted in the project being released in multiple packages. The packages were divided such that the Contractor could continue work seamlessly from package to package. The first package involved major site work and the upgrade/addition of facilities located around the periphery of the plant site. The second package involved release of major long lead equipment for early procurement and majority of the structural design.

The third package included the remainder of the structure design, mechanical/electrical design, site work and grading.

Initial site work involved the construction of a complex 50 feet deep drilled pier system with tie-backs due to its close proximity (approximately 15 feet) to the West Basins and to enable the West Basins to operate without any disruptions. This phase also included the replacement of 20 to 30 feet of native material with CSA produced on-site on a real time basis. An extensive backfill operation and continuous QA/QC of the backfill material helped ease the City’s mind and alleviate concerns regarding any future soil settling. Hourly and daily monitoring of geotechnical parameters (inclinometer, tilt plates, joint gap and vibration) armed the design team with information to proactively predict and minimize any potential settling of West Basins.

There were a number of modifications/additions to existing facilities during the course of this project. The Backwash Pump Station discharge header was increased in size and brought above grade in its entirety to account for increased flow rates required for GAC FA backwashes. This work along with work to isolate the East Plant was performed during the first of three major plant shutdowns for this project. During the course of construction, the City changed its primary coagulant from alum to ferric chloride. The design team prepared contract documents for this conversion as a separate package. Since the primary coagulant is a key ingredient in the treatment process, the entire plant was shut down for four months for completion of alum to ferric chloride conversion.

A total of approximately 130 Maintenance of Plant Operations (MOPOs) were performed during the entire duration of construction. Use of advanced BIM technology enabled the team to anticipate potential conflicts and resolve them on paper minimizing disruptions to construction. Linking the 3D Model to the construction schedule allowed the construction team to track progress very closely and also assisted in manpower planning and site logistics. This organized approach helped the Plant Operations, McCarthy and Wilson Engineers gain efficiencies in project schedule and budget.

A streamlined procedure for startup/testing and commissioning was identified and established early in the project to allow all four thousand pieces of equipment/instrumentation of varying degrees of size and complexity to be properly tested and signed off by all stakeholders prior to placing the system in service.

The entire project team admirably led by the City of Phoenix can be proud of successfully completing the Deer Valley WTP project on time and within budget. The plant is currently in operation with minor enhancements being made with the remainder of the Contractor’s Contingency available.
Leak Detection can be a very effective tool for locating and repairing leaks throughout your community. I worked for a City in the Midwest that had a Leak Detection van and trained personnel to investigate and pinpoint leaks in historic sections of the downtown area. Prior to doing a street improvement or any excavation in these areas with older infrastructure, City Leak Detection crews conducted an evaluation prior to the plan design stage. The crew worked between midnight and 5:00 am to avoid impacting water usage in nearby commercial properties.

During one of these routine investigations in advance of a street improvement project, the crew detected a significant leak. A soft dig was completed to verify the leak, while minimizing disruption to downtown traffic. Ironically, the soft dig found no water and the main appeared to be dry. Water Services requested the City Engineer allow time for further investigation prior to the design and construction of the street improvements. Subsequent attempts to locate the leak were unsuccessful and provided little insight as to the amount of water being lost. The leak Detection crew was dispatched again. The crew verified the location and reported that the leak had increased. It was then decided it would be necessary to excavate the main to find source of the water loss. Excavation of the 12” Cast Iron Pipe (CIP), revealed approximately 1,200 gallons per minute of water was being lost. Why no water?

An earlier project had separated an existing combined sewer. A concrete storm sewer line was installed under the existing 12” CIP and the settling created a crack and separation in the bottom of the 12” water main. The storm sewer also developed a small hole in the top of the concrete pipe. As fate would have it, the hole in the sewer line was directly below the crack and hole in the water main. As the water left the main it went directly into the storm sewer pipe which flowed to the river approximately 800 feet to the east. Since no water ever reached the surface, the leak most likely would have gone undetected if not for the equipment and skill of the Leak Detection crew.

The lesson learned – always do an underground pipe analysis prior to a major street project on a heavily traveled thoroughfare. Even with no evidence of issues at the surface, there may be a significant danger lurking beneath the facade of a calm street.

CH2M HILL is your community’s partner for clean water solutions. We are providing a comprehensive package of water, wastewater, water resources, and utility management services to our Arizona clients. We continue our dedication and assistance in achieving a sustainable yet cost-effective water supply today and in the future.
Is your data working for you?

Our Environmental Data Management solutions ensure data integrity and minimize risk.

Quality assurance:
Ensuring the integrity of your data is critical. Our specialists verify your data, reviewing it for accuracy, representativeness, and usability. When necessary, we work with labs and field teams to implement corrective actions.

Database development:
M&A constructs industry-standard relational databases that are tailored to your project. If the formats and sources of your data vary, we standardize them to create a single, functional data set that you can trust.

Analysis and reporting:
Access your data any time via a powerful interface that lets you generate tables, graphs, and maps with a few clicks... or let us develop a simple, web-based dashboard to suit your unique data access and reporting needs.

520.881.4912
www.elmontgomery.com

MONTGOMERY & ASSOCIATES
Water Resource Consultants

The M&A Toolbox
Hydrologic Modeling  Decision Support Systems  Environmental Data Management  Satellite Imagery Analysis  Expert Testimony  HydroGeoMetrics
We are your Roots Distributor and Repair Center

Rely on us to replace, repair, install, re-locate and serve all your water and wastewater air needs.

fluid technology

Please contact:
Josh Stockwell • Fluid Technology
1315 Nelson St., #H • Lakewood, CO 80215
602-252-1726 • Email: josh@fluid-technology.com

www.fluid-technology.com
I recently heard a presentation from a speaker named Paul Tsika about “Peace and Purpose in Life”. I would like to share some of his thoughts with you on how we think about time.

Many people are looking for Peace in their life. It has been said that most people do not have peace in their life because they do not have a sense of Purpose. They need a sense of Purpose greater than themselves and they also need a sense of Destiny.

If we do not have a sense of valuing who we are and what we do, there can be no peace. We must have something that we can do with our lives that is greater than just serving ourselves. When a person is self consumed and self absorbed, it is like they are just spinning without getting ahead. We must add value and encourage and serve others. Unless we add value and serve others, we will only have confusion, doubt, and fear in our lives.

It seems like many people these days are consumed with fear and doubt. We all know that peace is something that everyone desires, but few desire the things that make the peace. We must desire the things that make for peace, otherwise we will not have any peace in our lives. If there is no peace in your life today, it is likely due to the fact that there is no purpose in your life today.

Take a person with a purpose and a passion in their life and they will have peace in their heart and life. Are you excited to get up and get going every morning? It is the way that all of us should be in our lives! There should be a passion to get up in the morning and add value to others. This passion is revealed through a desire to serve others and make a difference.

How do you cultivate a mental attitude that will bring you more Peace and Contentment? It is helpful if you can center on your purpose in life. It will be different for everyone. Generally it will be as follows:

- You add value to others
- You are a blessing to others
- You are going to empower others
- You are going to make a difference in other people’s lives by serving them

It has been said that your rewards in life are in direct proportion to the problems that you solve for others. If you are not helping to resolve issues and problems in other people’s lives it may be because you are too self centered or self consumed. Sometimes it is simply taking the time to listen. Sometimes it is mentoring others. Sometimes it is empowering others. If you do these things you will find PEACE and great reward.

What can bring PEACE to your life?
- Fill your mind and your life with thoughts of PEACE
- Eliminate the garbage in your life
- Eliminate the negative associations and inputs from as many sources as possible
- Fill your life and time with:
  - Good books and positive reading
  - Positive audio CDs
  - Positive places that you attend
  - Positive entertainment
  - Positive associations

The more determined you are to fill your life with the right things and right thinking, the more PEACE you will have in your life.

1. Fill your life, mind, time, and attention with things that bring peace in your life
2. Never try to get even with your enemies
3. Expect Ingratitude - not everyone will be grateful for who you are and what you do
4. Live a positive lifestyle
5. Expect misunderstanding for what you are trying to do
6. Count your blessings not your troubles
7. Do not try to imitate others
8. Duplicate the good things you see in others, but do not imitate others
9. Profit from your losses and wrong choices - be quick to apologize and learn from your bad choices
10. Create happiness for others - pick up a dinner tab for a Military Person or Public Safety Person the next time you are in a restaurant

PEACE is a very valuable thing. The best thing about it, is that YOU are ultimately in control of having PEACE in your life.

My hope is that this issue of Success and Fun will help each one of us change the way we think and act in our daily lives. I am honored to share my perspective on “SUCCESS and FUN”. I hope to hear from you, contact me at phendricks@cox.net if I can be of assistance to you.
BEST SHOT PHOTO CONTEST
This is your opportunity to submit your best shot.

Photography, like art, is meant to capture a moment, convey a feeling and tell a story. Arizona has many beautiful water features and AZ Water would like to use photos for publications including a 2012 calendar. The photographers will be recognized, however there is no prize money.

Photos that depict treatment facilities are discouraged due to security. Photos submitted may show treatment processes as long as the photo cannot be used to identify a given facility. Photographers are responsible for obtaining permission for photos taken and submitted.

Photos will be evaluated by a panel of judges; none are professional photographers nor are they trained in the ways of artist presentation or composition. Judges simply select the photos that strike them for whatever reason.

There are no fees to enter.

GUIDELINES:
✓ Each entrant may submit up to three photos files.
✓ Each photo name will be the subject and your last name. For example a Roosevelt Dam photo by John Smith would be “Rooseveltsmith”. If you submit a second Roosevelt Dam photo the name on second photo will be “Roosvelt2smith”, etc.
✓ Email the photo, digital image and entry form by August 31, 2011 to: AZWaterPhotos@gmail.com.
✓ The digital image should be the high quality image (jpeg file) to insure a quality publication, however no larger than 10 MB.
✓ You agree to allow AZ Water to use the photos by submitting the Photo Entry Form.
✓ No photoshopping or other digital manipulation. This does not apply to photographic techniques contained within the camera’s abilities (i.e. manual shutter release at night). You may crop an image.
✓ Do not watermark or place any distinguishing marks on the image.

Note: Photos thought to be outside of the criteria may be removed from consideration without the entrant being notified.

More information and links at www.AZWater.org
Electronic submissions to: AZWaterPhotos@gmail.com by August 31
# BEST SHOT PHOTO CONTEST

Photo Entry Form – Submit by August 31, 2011 to [AZWaterPhotos@gmail.com](mailto:AZWaterPhotos@gmail.com)

<table>
<thead>
<tr>
<th>Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Contact Phone #: ( )</td>
<td>Email address:</td>
</tr>
</tbody>
</table>

You can submit up to three photos

<table>
<thead>
<tr>
<th>Photo</th>
<th>Photo Location</th>
<th>Digital file name¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Submit this form electronically with your `jpeg` photo files to AZWaterPhotos@gmail.com. In doing so you agree that the photos are your original artwork, are not copyrighted and your permission is given to AZ Water to use the submitted photos for publication.

Name this file: Permission last name, for example: **PermissionSmith**²

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

Questions: [Charolottejones@cox.net](mailto:Charolottejones@cox.net)

---

¹ File Name: LocationPhotographerlastname example: RooseveltSmith
² File Name: Entry Form (Permission for use) example: PermissionSmith

More information and links at www.AZWater.org
Electronic submissions to: [AZWaterPhotos@gmail.com](mailto:AZWaterPhotos@gmail.com) by August 31
WaterSmart Innovations 2011
Your investment in a more water-efficient future

You’ve seen the effects of drought on your community. Now come learn what you can do to help your customers stay WaterSmart.

From October 5 – 7, 2011, water-efficiency professionals from across the country and around the world will convene in Southern Nevada for the fourth annual WaterSmart Innovations Conference and Exposition.

Featuring informative professional sessions and an expo hall, this international, multidisciplinary urban water-efficiency event is a forum for participants to share experiences and ideas in an atmosphere of cooperation and collaboration.

With a low registration rate of $390 per attendee, plus affordable room rates and airfares, it’s easy to see why WSI 2011 won’t sink your travel budget.

Save the date for WSI 2011 to absorb new concepts and inspirations for a water-efficient future.

Registration Now Open
www.WaterSmartInnovations.com
AWWA director report  continued from page 6

suggest that the agency’s risk assessment is overly conservative).

Regarding Lead Service Lines, AWWA provided input to EPA’s Science Advisory Board Drinking Water Committee for its review of the efficacy of partial lead service line replacement. AWWA told the committee that AWWA has historically advocated and continues to advocate “getting the lead out,” including full-lead service line replacement through collaboration with the property owner. Having said that, AWWA told the committee that additional research is needed to avoid the possible misattribution of certain observed high lead levels to partial lead service line replacement.

AWWA STANDARDS

In April, the AWWA Standards Council added the revision of 21 standards and the development of one new standard to its work plan for this year. To identify AWWA Standards by keywords or contact appropriate AWWA Standards engineers and learn of volunteer opportunities, you should download the AWWA Standards spreadsheet file from the AWWA website at AWWA.org.

Lastly, something new to try out: A virtual conference that includes a 1 minute contribution from David LaFrance of AWWA. That’s right, just 1 minute!

This conference is sponsored by Dow Chemical and it is entitled “Future of Water”. This is part of a series of web conferences under an umbrella theme called “The Future We Create”. The unique aspect of the conference is that in 60 minutes there are 60 speakers – 1 minute each. The speakers all come from different aspects of the water community and what they have to say is not organized other than they were to speak on the future of water. Check it out at: http://www.futurewecreate.com.

That’s all for now. I hope to see you at an AZ Water event later this year.
AZ Water Association Membership Form

This information will be added to our database and used to inform you of opportunities specific to your needs. Your contact information will also be used in our annual membership directory. If you do not want this information published in our annual directory, please check here ☐.

Please Print

Full Name __________________________________________________________________________

Title ________________________________________________________________________________

Business (if applicable) __________________________________________________________________

Address _______________________________________________________________________________

City/State/Zip __________________________________________________________________________

Phone _______________________________ Fax _______________________________

Email __________________________________ Web Site _______________________________

Sponsor ________________________________________________________________________________

Check here if you are a current member of: ☐ AWWA ☐ WEF

Please help us serve you better by indicating the categories that best describe your business/industry, environmental focus, job title, and field services (if one is more prominent than another, please indicate so).

BUSINESS INDUSTRY

Government
☐ public owned municipal or special district, water, wastewater treatment system or plant processing > 1mgd
☐ public owned municipal or special district, water, wastewater treatment system or plant process < 1mgd
☐ administration and/or enforcement of government environment programs administration of public health programs

Private Entity
☐ private or investor owned facility
☐ private industrial systems
☐ consultant
☐ contractor
☐ manufacturer (equipment or representative)
☐ distributor (equipment or representative)

Other Entities
☐ educational institutions (all components)
☐ research laboratory
☐ other ____________________________

FIELD SERVED
☐ water supply only
☐ wastewater only
☐ both industries
☐ other ____________________________

ENVIRONMENTAL FOCUS
☐ wastewater
☐ water
☐ process water
☐ ground water
☐ solid waste
☐ storm water
☐ pollution prevention
☐ residual/biosolids management
☐ coastal, river, lake ecology/surface water
☐ toxic & hazardous materials
☐ public education / information
☐ instrumentation/automation controls
☐ other ____________________________

JOB TITLE
☐ EXECUTIVE: commissioner, board member, city manager, mayor, president, vice president, owner, partner, director
☐ MANAGEMENT: division head, section head, manager, chief engineer, comptroller, etc.
☐ ENGINEERING/NON MANAGERIAL: civil engineer, mechanical engineer, environmental engineer, planning manager, field engineer, system designer
☐ SCIENTIFIC/NON MANAGERIAL: chemist, biologist, biophysicist, researcher, analyst, etc.
☐ PURCHASING: purchasing agent, procurement specialist, buyer
☐ OPERATIONS: foremen, operator, maintenance, crewman, service representative, etc.
☐ MARKETING & SALES-NON MANAGERIAL: market analyst, marketing representative, sales representative, etc.
☐ STUDENT
☐ RETIRED INDUSTRY REPRESENTATIVE
☐ OTHER ____________________________

Member Dues are Subject to Change

☐ Individual Annual Membership — $45
☐ Student Annual Membership — $15

RETURN YOUR MEMBERSHIP APPLICATION ALONG WITH ANNUAL DUES TO:
AZ Water Association
1042 Willow Creek Rd., A101-510 • Prescott, AZ 86301

Questions? Call toll free 888-559-8844 • 928-717-9905 phone • 928-717-9910 fax
REDUCING CARBON FOOTPRINT

We’re dedicated to maximizing the energy efficiency of the products we sell to you. We perform life cycle assessments to critically evaluate such things as global warming potential, resource consumption and ecotoxicity. The end result: Sustainable ultraviolet water treatment solutions that reduce your carbon footprint and environmental impact.

Our environmental policy means the world to us. Read more about it at trojanuv.com.
AZ Water Committee Volunteer Form

Please Print

Name
Title
Organization
Address
City/State/Zip
Phone: ___________________________ Fax: ___________________________
Email

AZ Water COMMITTEES
(indicate 1st, 2nd, 3rd choice)

**Administrative**
- [ ] Budget, Finance, Audit
- [ ] Constitution & Bylaws
- [ ] Information Technology
- [ ] Leadership
- [ ] Strategic Planning
- [ ] Member Services
- [ ] Physical Assets
- [ ] Publications

**Award/History**
- [ ] Archives & History
- [ ] Awards

**Education**
- [ ] Annual Conference
- [ ] Lab Practices
- [ ] Luncheon Programs - Phoenix
- [ ] Luncheon Program – Tucson
- [ ] Research
- [ ] Safety
- [ ] Tri-State Seminar

**Outreach**
- [ ] Tap Into Quality
- [ ] Utility Council
- [ ] Water For People
- [ ] Young Professionals

**Specialties**
- [ ] Biosolids & Residuals
- [ ] Construction
- [ ] Wastewater Collections
- [ ] Reclamation
- [ ] Security/AZWARN
- [ ] Water Distribution
- [ ] Water Resources
- [ ] Water Reuse
- [ ] Water Treatment

- [ ] I am interested in serving on the committee(s) indicated above.
- [ ] I would like to know more information about the committee(s) indicated above.
- [ ] I am looking for suggestions for a committee on which to serve. My skills are: ____________________________________________

RETURN COMPLETED FORM TO:
AZ Water Association
1042 Willow Creek Rd., A101-510 • Prescott, AZ 86301

Questions? Call Deborah Muse toll free 888-559-8844
Town of Buckeye, AZ
3,000 GPM Arsenic Removal System

ARSENIC • IRON • MANGANESE • FLUORIDE
RADINUM • URANIUM • PERCHLORATE
REMOVAL SYSTEMS

- Skid Mounted Systems
- Flow Ranges from 50 to 20,000 GPM
- Automated Controls
- Minimal Maintenance Requirements
- Design Build Systems
- Backwash Reclaim Systems
- Chemical Pretreatment Systems
- Pilot Studies

Local representative: REACO Associates LLC
Chuck@ReacoAssociates.com
(262) 573-0389
E-mail: pureflow@pfdiv.com Website: www.pfdiv.com
THANK YOU
to all who donated and participated in this year’s
SPORTS & ENTERTAINMENT
Red Carpet Silent Auction

Thanks to your generosity we were able to raise over $3,000 for Water For People

Event Sponsor:

www.waterforpeople.org
We can't wait to see you in Los Angeles in October. In addition to the business opportunities at the exhibition and the excellent training sessions, you will find great food and entertainment next door to the convention center. Everything you need can be found at www.weftec.org.

See you there...
ENVIRONMENTAL WORKSHOP – 5 FREE PDHs

Wednesday, August 24th, 2011  8:45 AM – 3:00 PM

Legend Technical Services of Arizona, Inc. (LEGEND), a full-service environmental laboratory, is providing assistance to water and wastewater operators and the environmental community in obtaining training and professional development hours (PDHs) through free workshops held throughout Arizona. Workshops will be held in outreach areas as well as in the Phoenix and Tucson metropolitan regions.

Visit the AZ Water Association website (www.azwater.org) for upcoming workshops.

Thank you & sincere APPRECIATION to the City of Surprise!

City of Surprise
Public Safety Building Auditorium
14250 W. Statler Plaza, Surprise, AZ 85374

8:45 AM – 9:00 AM -----Welcome Presentation

9:00 AM – 9:50 AM ------Operator Certification – Bill Reed, ADEQ and Noah Adams, ADEQ

10:00 AM -10:50 AM------Disinfection By-Products Rule: Transitioning from Stage 1 to Stage 2
Donna Calderon, ADEQ

11:00 AM - 11:50 AM-------Overview of Arizona Drinking Water Rules – Suzanne Price, ADEQ

12:00 Noon-1:00 PM -----LUNCH – on your own.

1:00 PM– 1:50 PM---- Coliform Bacteria-Sample Collection and Analyses
Robert Vertefeuille, LEGEND Director of Operations/Sr. Microbiologist

2:00 PM – 2:50 PM-----Metals 101 – Dianne Frydrych, LEGEND Sales and Marketing Manager

*5 PDHs, *ADEQ Presentations, *FREE OF CHARGE,
*Technical Presentations, *Continental Breakfast, *Door Prize, * Q & A Time with ADEQ
*Laboratory Professionals *Network with Other Operators in the Industry.

LEGEND would also like to thank ADEQ for their dedicated concern and diligence to ensure that Operators are informed and have the capability to get their needed PDHs Free of Charge.

RSVP to: Dianne dfrydrych@legend-group.com or call 602-324-6121
Leading the Way in Arizona.

Severn Trent Services provides the finest in municipal wastewater and water management. A public-private partnership with us can provide the expertise gained through more than 30 years of experience operating, maintaining, servicing and managing utilities. Our dedication to innovation, efficiency and quality creates the perfect combination. Currently, over 400 communities nationwide rely on Severn Trent for the provision of their water and wastewater management. That’s why a number of Arizona communities have successfully partnered with Severn Trent. To learn how the management of your facilities can benefit from a public-private partnership with Severn Trent, contact us today.

Ed Schwab  
Client Relations  
719 475-2258  
eschwab@stes.com

Fred Kriess, Jr.  
Senior Area Manager  
623 572-9550  
fkriess@stes.com  
www.severntrentservices.com

LAB RESULTS IN 7 DAYS!

WITH FINAL REPORT AND EDD!

YOU ASK. LEGEND DELIVERS.

- 7-10 DAY Standard TAT
- 24/7 Free Online Data Access
- Open 365 Days A Year

Environmental Laboratory Services since 1959.

(602)-234-6100 – (520) 327-1234
Locations in Phoenix and Tucson

*7-10 day standard TAT time on most in-network analyses.
ENVIRONMENTAL WORKSHOPS - TRAINING AND FREE PDHs

Legend Technical Services of Arizona, Inc. (LEGEND), a full-service environmental laboratory, is providing assistance to water and wastewater operators and the environmental community in obtaining training and professional development hours (PDHs) through free workshops held throughout Arizona. Workshops will be held in outreach areas as well as in the Phoenix and Tucson metropolitan regions.

Visit the AZ Water Association (www.azwater.org) for upcoming workshops

Thursday, August 11, 2011
Town of Buckeye Water Resources at the Buckeye Valley Chamber
508 Monroe, Buckeye, AZ 85326
2 PDHs 9:15 AM – 12:00 PM

Metals 101
Presented by: Dianne Frydrych, Sales and Marketing Manager

Interpreting Your Report
Presented by: Robert Verteefeuille, Director of Operations/Sr. Microbiologist

Friday, Sept 23, 2011
The Joe Montoya Community Center
245 E. Thorpe Rd., Flagstaff, AZ 86001
2 PDHs 9:15 AM – 12:00 PM

Coliform Bacteria-Sample Collection and Analysis
Presented by: Robert Verteefeuille-Director of Operations/Senior Microbiologist

Sample Containers, Preservatives & Hold Times & Lab Forms & Safety
Presented by: Dianne Frydrych-Sales and Marketing Manager

Wednesday, October 26, 2011
City of Yuma Public Works Building
155 W. 14th St., Yuma, AZ 85364
2 PDHs 9:15 AM – 12:00 PM

Sample Containers, Preservatives, Hold Times, Lab Forms and Safety
Presented by: Dianne Frydrych-Sales and Marketing Manager

Interpreting Your Report
Presented by: Lisa Parrish-Client Services Manager

Class sizes will be limited. Please register by contacting Dianne Frydrych, Sales and Marketing Manager: (602) 324-6121 or dfrydrych@legend-group.com

FREE OF CHARGE – with PDHs – Very Informative & Informal
Thank you to all our sponsors, golfers and supporters! With your help we raised over $7500 this year!!

Look out for a detailed article with exciting pictures in the next newsletter!

Want to enjoy the pictures now? Go to our photo sharing site - http://picasaweb.google.com/azwaterforpeople
26TH ANNUAL
WATEREUSE SYMPOSIUM
SHERATON WILD HORSE PASS RESORT
PHOENIX, AZ • SEPTEMBER 11-14, 2011

The World’s Premier
Conference Devoted
to Sustaining Supplies
through Water Reuse
and Desalination
THANK YOU!!!!

Participants and Sponsors of the 6th Annual Exhibitor Silent Auction at the AZ Water Annual Conference & Exhibition!

A Special Thanks To: Lance Mason, Bradley Colby, Jennifer Getchell & David Christiana

Together we donated over $1,000 dollars to Water For People, and we couldn’t have done it without your help!

www.waterforpeople.org
Trusted and accepted

Easy, rapid, accurate water testing from IDEXX Water Microbiology

- Water microbiology tests for E. coli, coliforms, enterococci, Cryptosporidium, Giardia and Pseudomonas aeruginosa
- Colilert®-18 meets all EPA requirements for the measurement of fecal coliforms in wastewater
- Dedicated customer and technical service, and sales and regulatory support

Helping to protect water quality for over 2 billion people worldwide.

Plain, adorned or concealed
the beauty of a DYK tank is in the structure

Whether your DYK prestressed concrete tank is above ground, architecturally treated or fully buried, you’ll know you have:

- Efficient design
- Minimal maintenance
- Best return on investment

© 2010 IDEXX Laboratories, Inc. All rights reserved • 9693-00
Colilert is a trademark or registered trademark of IDEXX Laboratories, Inc. or its affiliates in the United States and/or other countries.
The IDEXX Privacy Policy is available at idexx.com.

For more information, please call your IDEXX representative at 1-800-321-0207 or visit idexx.com/water.

www.dyk.com 1-800-227-8181

Layne Water
Define, Develop, Deliver

Isn’t it time you did away with hard-to-use, high maintenance arsenic systems with backwash, onsite residuals and waste disposal costs?

ARSENIC SOLUTIONS

3804 E. Watkins Street • Phoenix, AZ 85034 • 602.345.8600 • www.LayneWater.com
85th Annual Conference & Exhibition

CALL FOR ABSTRACTS

Abstracts Due: November 18, 2011

May 2-4, 2012

Renaissance Glendale Hotel & Spa, Glendale, Arizona

GENERAL INSTRUCTIONS

Individuals interested in presenting at AZ Water’s 85th Annual Conference & Exhibition must submit the following four documents by November 18, 2011:

1) Complete the Abstract Submittal Form
2) Provide a one page abstract describing the subject matter in sufficient detail to allow evaluation of the proposed topic.
3) Provide a short paragraph description of the session presentation not to exceed 125 words. This summary will be included in the conference marketing brochure.
4) Provide a short biography of the presenter, not to exceed 60 words. This summary will be read by the moderator before the presentation.

Generally, presentations will be limited to 25-30 minutes including time for questions, however, longer presentations will be considered.

SUGGESTED TOPICS

WATER
• Treatment Processes
• Water Quality
• Distribution Systems
• Water Conservation & Auditing
• Source Protection
• Source Decision Approach
• Consumer Confidence
• Groundwater
• Operations
• Water Resources Planning

WASTEWATER
• Pretreatment
• Treatment Processes
• Biosolids Management
• Bio-energy
• Collection Systems
• Storm Water
• Odor Control
• Receiving Water Quality
• Operations
• CMOM

WATER REUSE/RECHARGE
• Advanced Treatment
• End Users
• Regulators
• Public Acceptance
• Benefits and Challenges
• Dual Plumbing
• Distribution Systems
• TDS Issues and Brine Treatment

JOINT
• Utility Management
• Facility Operations
• Construction Projects
• Regulatory Issues
• International Topics
• Research Topics
• Instrumentation and Control
• Security/Vulnerability
• Watershed Management
• Public Information
• Alternative Delivery/Design Build
• Green/Sustainability Issues
• Young Professionals
• Water for People
• Public/Private Partnership

WATER REUSE/RECHARGE
• Advanced Treatment
• End Users
• Regulators
• Public Acceptance
• Benefits and Challenges
• Dual Plumbing
• Distribution Systems
• TDS Issues and Brine Treatment

JOINT
• Utility Management
• Facility Operations
• Construction Projects
• Regulatory Issues
• International Topics
• Research Topics
• Instrumentation and Control
• Security/Vulnerability
• Watershed Management
• Public Information
• Alternative Delivery/Design Build
• Green/Sustainability Issues
• Young Professionals
• Water for People
• Public/Private Partnership

SELECTION CRITERIA

Abstracts will be reviewed and judged on the basis of the following criteria:

— Describes the paper in a clear and concise manner.
— Significance of the work to a broad audience.
— Originality of the work, including new concepts, innovations, or data.

ABSTRACT SUBMITTAL FORM (Fill out Form or Create Word Document)

TITLE OF PAPER:

List Main Topic and Sub-topic (closest to suggested topics listed above) ________________________________

If your presentation is for a Committee Large Block, List Committee ________________________________

Corresponding Author (all correspondence will be with this author)

Name: ___________________________________________ Title: ________________________________

Employer: ________________________________________

Address: _________________________________________

City, State, Zip: ____________________________ E-mail Address (required): ____________________________

Phone: __________________ Fax: __________________

Check here if interested in receiving more information about the Young Professionals “Fresh Ideas” contest for accepted papers _________

SUBMIT THE FOUR DOCUMENTS TO:

OPTION 1: EMAIL TO:

Jacksonla@bv.com
Subject: AZ Water 2012 Submittal

OPTION 2: BY USING AZ WATER WEBSITE

2012 Annual Conference
http://www.azwater.org

OPTION 3: MAIL HARDCOPY TO:

Attention to: Lisa Jackson, P.E.
Black & Veatch Corp.
3133 E. Camelback Rd., #210
Phoenix, AZ 85016
Phone: 602-381-4431
The AZ Water Association returned to the Renaissance Glendale Hotel for a very successful three days. Over 940 registrants gathered for the AZ Water 84th Annual Conference on May 4-6. The Conference was extremely successful despite the continued hard economical times all the utilities, consultants and vendors/manufacturers are being faced with.

Gratitude and sincere appreciation goes out to Don Manthe, Conference Chair, Tim Thomure, Conference Program Task Force Committee Chair and the many conference volunteers for making the Conference a blanket success with final numbers and award winners to be proud of.

The following pages highlight this year’s award winners, exhibition, technical presentations, sessions, barbecue, and attendees having a great time. The Projects of the Year are featured in articles throughout this newsletter.

Don’t forget to mark your calendar for AZ Water’s 85th Annual Conference & Exhibition, May 2-4, 2012 once again at the Renaissance Glendale Hotel.

CONFERENCE BY THE NUMBERS

Grand Totals

- 942 Registrants – All Time Record!
- 332 Exhibit Registrants – All Time Record!
- 149 Exhibition Booths – All Time Record!
- 168 Speakers in Seven Concurrent Sessions
- 185 Technical Sessions
- 60 Conference Committee Volunteers
- 44 Conference Sponsors
- 34 Best of the Best Awards Presented
- 33 Safety Certificates Presented
- 13 Scholarships Awarded
AZ WATER AWARDS

Young Professional of the Year
Jeanne Jensen
Accomplishments…
• Bachelor of Science in Civil Engineering – Arizona State University
• Master’s of Science in Civil/Environmental Engineering – Arizona State University
• Registered Professional Engineer
• AZ Water Scholarship Program Coordinator

Engineer of the Year
Thomas G. Sands
Accomplishments…
• Bachelor of Science in Civil Engineering – Arizona State University
• Registered Professional Engineer
• Registered Land Surveyor
• Fellow – American Society of Civil Engineers
• Distinguished Service Award – Arizona Society of Civil Engineers
• Member of AZ Water and AWWA for over 20 years
• Member of AZ Water – Water Reuse and Conservation Committee
• Drought Symposium Chairman – 2004
• Water Reuse Conference Committee – 2002
• Past member of the Research Awards Committee and the Technical Programs Committee
• Outstanding project work for SRP over the last 37 years!

Quentin Mees Research Award
Using ClO2 to Reduce TTHM Formation:
A Full-Scale Evaluation
Authors: Jacqueline Shaw, Laurel Passantino, and Zaid Chowdhury – City of Phoenix
Criteria for Nominee:
This award strives to bring research in water-related technology to the level of practical use.
• Originality of research
• Completeness
• Pertinence to current water resource need or topic of concern in Arizona
• Advancement of knowledge
• Practical use of application
• Quality of presentation

Nathan Burbank Environmental Educator Award
John Bannen
Accomplishments…
• AZ Water Board Member
• WEF Safety and Occupational Health Committee Chair
• Grade III Water Distribution System and Water Treatment Plant Operator
• Grade II Wastewater Collection System and Wastewater Treatment Plant Operator
• Provided instruction to over 10,000 students over the last 10 years
• Provided operator certification, process control and fundamentals of the water industry training
• Created hands-on and skills assessment activities
• His sense of humor, light-heartedness and means of interacting with his students make him a favored instructor
Criteria for Nominee…
• AZ Water committee training activities
• Development and implementation of public education programs geared towards the water environment
• Instruction, development and delivery of environmental training

Environmental Stewardship Award
David McNeil
Accomplishments…
• Bachelor’s Degree in Communication – University of Texas
• Master’s Degree in Environmental Policy – Ohio State University
• Environmental Services Administrator for City of Tempe
• Government Affairs Committee for WEF
• Maricopa Association of Governments – Water Quality advisory Committee for over 10 years
• Served on the Board of Directors for the Western Coalition of Arid States
• Project Advisory Committee for climate related research though Water Research Foundation
• Been known to appear as “Wayne Drop” from time-to-time
• A leader in his community, a leader for our industry
Criteria for Nominee…
• An individual contributing significantly to the protection and/or enhancement of the water and wastewater environment in Arizona.

Kachina Award for Outstanding Service
Mark Stratton
• Born and raised in up-state New York
• Attended College at the University of Arizona
• Initially worked for a wastewater agency but is now the General Manager of a drinking water agency
• Served on the AZ Water Board and is a Past President of AZ Water

Awards
• Past AWWA Director for AZ Water
• Received AZ Water Engineer of the Year Award in 2008
• Instrumental in forming the Southern Arizona Water Users Association
• Known as a buffalo – Water Buffalo
• Drives a “smart” car
• Thinks he’s a good golfer?
Criteria for Nominee…
• Twenty five (25) years active membership in AZ Water, or,
• A combination of fifteen (15) years AZ Water membership plus membership in one other member association with similar affiliations (e.g., AWWA, WEF) for a total of twenty five (25) years.
• Sustained outstanding service to AZ Water while an active member.

Select Society of Sanitary Sludge Shovelers
L-R Ed McCormick, WEF Board Trustee; Asia Philbin, Christina Hoppes, and Craig Woolard, AWWA Immediate Past President.
Second Photo, inductee – Guy Carpenter.
Criteria for Nominee…
• AZ Water members who have volunteered consistently for many years and who have done two of the following:
  • Presented a paper on an AZ Water conference or been a speaker at another of our events.
  • Chaired an important committee.
  • Done something that is clearly above and beyond regular volunteerism.

AZ Water Life Members
Criteria…
• A person who has been a member in good standing of the AZ Water Association for at least twenty-five (25) years and who has participated in association activities.

Congratulations (L-R): Marc Levesque, John Meyer, Prakash R. Rao
AZ WATER AWARDS

“BEST OF THE YEAR”
Plant and System Operation Awards
Categories...
- Facilities, Plants, or Systems: water, wastewater, collections and distribution
- Individuals: Operators, Supervisors, Electricians, Maintenance Mechanics or Instrumentation Technicians
- Small System = facility serving < than 50,000 population
- Large System = facility serving > than 50,000 population
- Involvement and knowledge in: operations, new methods, projects or technology, improvements, safety
- Team environment, positive attitude and goal-driven
- Motivation to develop and progress: education, training, personal advancement and upgrading of certifications
- Ability to instruct or train others
- Number of years of experience on the job
- Sustained outstanding service to AZ Water
- Must meet the regulatory requirements and quality standards

PLANTS OF THE YEAR
Large Water Treatment Plant of the Year
Lake Pleasant WTP, City of Phoenix
- No loss time injuries since plant began in April 2007
- Its multi-barrier process
- Improved effluent turbidity by using several different coagulant aid polymers
- Power consumption has been reduced as a result to programming modifications
- The facility is the largest design-build-operate project in North America serving 400,000 customers
- Has been designed to meet the COP enhanced water quality standards

Small Water Distribution System of the Year
Santa Cruz Water Company, Global Water
- Serving a population of 43K & 17K connections
- Operation is 3x times as efficient with remote access to SCADA from smart phones. SCADA system now allows operators to instantaneously track chemical & power costs, risk of asset failure & PM’s
- New advanced pressure management system
- AMI system eliminates the need for meter readers
- New online safety management program in Q4 2010 has resulted in no incidents since adoption

Large Water Distribution System of the Year
Prescott Valley Water System, CH2M Hill
- Over 1030 days w/o a single safety incident. This includes over 200K road miles w/o a motor vehicle accident
- No compliance violations in 2010
- In addition to daily safety training, staff conducts training on a continuing basis
- Many efforts have been made to help protect the environment & eliminate ground water contamination through a project wide Sustainability Plan
- The staff is involved with many community projects

Large Wastewater Treatment Plant of the Year
City of Chandler Ocotillo WRF, operated by Severn Trent Services
- Efforts to achieve cost efficiencies through carbon footprint reduction, technology-based energy systems & equipment projects, and strategic replacement of critical equipment
- Fully compliant during 2010
- Installation of high speed blowers, an aerations basin air flow control system and electrical switchgear for greater reliability
- Participation in the SRP Large Business Solutions Program
- Participation in the SRP Energy Curtailment Demand Reduction Program

Small Wastewater Treatment Plant of the Year
Palo Verde Utilities Company, Global Water
- Treating over 2MGD for a population of 43K, and delivering 575 MG per year of class A+ recycled water
- Upgrades to the components, instrumentation & operating platforms, resulting in numerous gained efficiencies & process control improvements while expanding available capacity
- Development of an advanced asset management system
- New online safety management program in Q4 2010 has resulted in no incidents since adoption
- 1500 hours of volunteered service

Small Wastewater Collection System of the Year
Palo Verde Utilities Company, Global Water
- 200 miles of collection mains, 2,700 manholes, & spans 45 Sq miles serving a population of 43K
- Operations staff drastically reduced odors & has seen power & chemical costs drop $220/MG
- Staff can access SCADA from any smart phone or internet access point
- Operations staff developed a breakthrough approach to collections maintenance that virtually eliminates the risk of blockages, overflows & development of septic conditions
- New online safety management program in Q4 2010 has resulted in no incidents since adoption

OPERATIONS PERSONNEL OF THE YEAR
Large Water Treatment Plant Operator of the Year
Brian Fayle, City of Phoenix
- Certified Operator 4 with 21 years experience
- Wears many hats: an advisor in overall planning, organizing & implementing process control activities and data cruncher
- Availability & team player
- Always in the forefront when alternative chemicals and advanced processes are tested
- Focused to improve the overall efficiency of plant operations
- Involved with optimizing the operation of filters turbidity and run times
Large Water Distribution System Operator of the Year
Mike Stevens, City of Peoria
- Certified Grade 4 in all four categories with 31 years experience
- Demonstrates leadership qualities
- Proficient in answering staff questions, solving problems and training new personal
- Trained and worked closely with the new well start-up team
- Always pursues excellence in operations, maintenance, safety and cross training
- A leader of a family band that has performed at many community benefits to help out people in need

Small Wastewater Treatment Plant Operator of the Year
Arthur Martinez, City of Goodyear, 157th Ave WRF
- Certified Wastewater Treatment 3 with 4 years experience
- Has learned very fast the complexities of the process control & how to properly manage it
- Committed to the strict compliance requirements & appreciates the high significance of public service
- Contributes overall information and training from experience and knowledge
- Vast knowledge in various chemicals
- Demonstrates leadership, enthusiasm, passion, dedication and teamwork

Large Wastewater Treatment Plant Operations Supervisor of the Year
John Pinkston, City of Chandler
- Certified Grade 4 in all four categories with 14 years experience at facility
- Demonstrates the desire to learn, ability to lead and dedication to the treatment facilities
- Responsible for the initial construction startup at the Airport WRF
- Instrumental in optimizing the use of the new anaerobic zone treatment process that has resulted in a reduction of scum accumulation
- Co-authored many presentations at the annual AZ Water conference
- An avid hiker that has contributed significantly to the sport through the online community

Electrician of the Year - Small System
Frank Gallego, Metro Water District
- 15 years experience at facility
- Responsible for the SCADA system communication & alarms
- Actively ensures that Arc Flash Hazard Evaluations are performed for all electrical equipment
- Promotes electrical safety within the workplace
- Installation of VFD’s to improve pump efficiencies
- Provided total supervision in the installation of a new electrical system at well site
- Evaluates & implements security systems
- Coaches softball for young ladies.

Laboratory Analyst of the Year
Mary McReynolds, Arizona American Water
- 20 years experience - Certified Grade 4 in WWTP, 3 in WT & 2’s in WWC & WD
- Holds a B.S. in biology & an AAS degree in Water Purification Technology
- Disciplined in maintaining a strict order of events & is tireless in the execution of duties
- Responsible for educating operators in proper lab procedures
- A visionary in respect to process optimization & budget constraints
- This person will be presenting at this year’s AZ Water conference discussing filamentous bacteria & the subsequent effects in wastewater treatment

Gimmicks and Gadgets Award First Place
Steve Hodges & Charlie Estrella
Aeration Basin Cleaning Water Cannons
- Cart Mounted Water Cannon
- Cost: $1,340
- Benefits: 1 Operator, No Confined Space, Saves Time Criteria:
  A novel and relatively simple mechanical device or procedure.
  Designed to provide a more efficient, safe, or simplified way to perform a routine task or function in the maintenance, operation, or construction of a water utility system.
  Judged on basis of originality, simplicity, use, and application to the water industry.

AZ WATER SAFETY AWARDS

WATER DISTRIBUTION OR TREATMENT
Award of Excellence – Awarded for utilities with between 101-500 employees, over 200,000 man hours worked and an incidence rate less than 1/3 the previous year’s industry injury rate based upon the SIC code and BLS data.
- Central Arizona Project

Letter of Commendation - Awarded for utilities that operate one year, but less than 200,000 man hours at the facility without a disabling injury accident. (1-100 Employees)
- Arizona American Water – Sun City
- Prescott Valley Water District – Operated by CH2M Hill
- City of Peoria – Greenway Water Treatment Plant
- City of Phoenix – Deer Valley Water Treatment Plant
- Arizona American Water – White Tanks
- City of Peoria – Quintero Water Treatment Plant
- City of Phoenix – 24th Street Water Treatment Plant

Water Distribution
- Prescott Valley Water District operated by CH2M Hill
- Arizona American Water – Sun City
- City of Peoria – Water Distribution System
- City of Peoria – Quintero Water Treatment Plant

Waste Water Treatment and Water Distribution Combined Operations
- Arizona American Water – Tubac
- Arizona American Water – Paradise Valley
- Arizona American Water – Anthem
- Arizona American Water – Lake Havasu
- Arizona American Water – Bullhead City (Mohave)

WASTEWATER COLLECTION OR WASTEWATER TREATMENT
Award of Merit - Awarded for utilities that operate one year with less than the maximum number of lost days but have less than 20,800 hours worked for the current year.
- Wastewater Treatment
  - Gilbert Neely WRF operated by Severn Trent Services
  - Arizona American Water – Northwest Valley Wastewater Reclamation Facility
- City of Peoria – Butler Water Reclamation Facility
- Arizona American Water – Verrado WWRF
- Arizona American Water – Bullhead City (Mohave)

continued on page 52
AZ WATER AWARDS

Safety Awards continued from page 51

Wastewater Collections, Wastewater Treatment or Combined Operations
- Fort McDowell Yavapai Nation operated by Severn Trent Services
- Arizona American Water – Anthem
- City of Peoria – Quintero Water Treatment Plant

Award of Honor - Awarded for utilities that operate one year with NO accidents and have more than 20,800 hours worked in that year.

Wastewater Treatment
- Prescott Valley Water District operated by CH2M Hill
- City of Peoria – Beardsley Water Reclamation Facility
- City of Peoria – Jomax Water Reclamation Facility
- Chandler Ocotillo Water Reclamation Facility operated by Severn Trent Services
- City of Safford WRP operated by Severn Trent Services

Wastewater Collections
- Prescott Valley Water District operated by CH2M Hill
- City of Peoria – Wastewater Collection System

GEORGE WARREN FULLER AWARD
Paul H. Kinshella
- Devoted his 37-year career to the advancement of safe drinking water and protection of water quality.
- Served the City of Phoenix Water Services Department from 1990-2010, where he supervised a staff of 20 and a capital improvement program in excess of $1,000,000.
- AZ Water committee chair, board member, president and annual conference committee chair.
- Quentin Mees Award recipient in 2004
- Engineer of the Year in 2007
- Kachina Outstanding Service awardee in 2010
- A consultant at Stantec
- Currently serving on the AZ Water Board of Directors as the WEF Delegate.

George Warren Fuller Awards are presented annually by the American Water Works Association to the sections’ respective selected members for their distinguished service to the water supply field in commemoration of the sound engineering skill ... the brilliant diplomatic talent ... and the constructive leadership which characterized the life of George Warren Fuller.

KENNETH J. MILLER WATER FOR PEOPLE AWARD
Levi Dillon
- An active volunteer on the Arizona Water for People Committee for six years and is currently the Committee Chair
- Started the Annual Water For People Amateur Beach Volleyball Tournament and Cook-out
- Under his leadership, the committee raised $35,000 in 2010
- He has all the qualities of a model volunteer

AWWA LIFE MEMBERS

Congratulations all safety awardees

AWWA GOLD DROP AWARD
Member for 50 Years

American Water Works Association
GEORGE W. BURKE JR. AWARD
Arizona City Sanitary District
The Burke Award is presented annually by the Water Environment Federation to the sections’ selected municipal or industrial wastewater facility for establishing and maintaining an active and effective safety program. This award was established in 1982 in honor of George W. Burke, Jr., for his many years of service to both the water environment field and WEF.

ARTHUR SYDNEY BEDELL AWARD
John Spielman
- Loyal member of WEF and AWWA for 20 years and AZ Water for 12 years
- Owner/President of IES Southwest, Inc.
- Served on the AZ Water Board of Directors as the Manufacturer’s Representative for seven years
- Organized the manufacturers exhibition at the AZ Water Annual Conference for seven years
- Dedicated to the water and wastewater industry

Arthur Sydney Bedell Award is presented annually by the Water Environment Federation (WEF) to the sections’ respective selected member to acknowledge extraordinary personal service to a WEF Member Association.

L-R: A representative from the Arizona City Sanitary District receives award from Ed McCormick, WEF Board Trustee.

WEF LIFE MEMBERS
Congratulations to (L) David Newkirk and John Getchell on achieving life membership in the Water Environment Federation.

WEF LIFE MEMBERS
Congratulations to (L) David Newkirk and John Getchell on achieving life membership in the Water Environment Federation.

2011 CONFERENCE SPONSORS

GOLD LEVEL
- Alan Plummer Associates, Inc.
- Black & Veatch
- Burns & McDonnell
- CH2M Hill
- Coombs Hopkins
- DERCETO, Inc.
- GHD, Inc.
- HDR Engineering, Inc.
- Malcolm Pirnie / Arcadis
- M.E. Simpson Company
- MGC Contractors
- MISCO
- Mortenson Construction Co.
- PCL Construction, Inc.
- Tetra Tech

SILVER LEVEL
- Calgon Carbon Corporation
- EcoVerde, LLC
- Felix Construction Company
- Hobas Pipe USA
- KRUGER, Inc.
- McCarthy Building Company
- Montgomery & Associates
- PERC Water
- Pioneer Equipment, Inc.

BRONZE LEVEL
- ADS Environmental Services
- Ameron
- Baker Water Systems
- Engineered Sales Company
- Kiewit Infrastructure West Co.
- KUV Consultants
- Morrison – Maierle, Inc.
- PACE
- Preload, Inc.
- Schneider Electric
- SunPower Corporation
- Sunrise Engineers

GOLF
- Ameron
- Brown and Caldwell
- CH2M Hill
- Global Sampson
- HDR Engineering, Inc.
- Huber Technology
- Malcolm Pirnie, a division of ARCADIS
- MGC Contractors
AZ WATER SCHOLARSHIP AWARDS

Scholarships were presented to 13 Post-Secondary, Undergraduate and Graduate students at Arizona schools, colleges and universities, pursuing studies related to water, wastewater, or environmental resources.

Judging Criteria for Applicants...
- Demonstrated achievement in chosen area of study.
- Understanding of a pertinent water issue in Arizona.
- Applicability of personal history and future plans.
- Creativity and writing ability.

Michael West
Achievements:
- A.A.S. Gateway Community College
- Water Resources/Hydrology
- Certified wastewater operator
- Utility Technician with Severn Trent Environmental Services
- Plans to pursue a bachelor’s degree in hydrology

Nathan Dunkin
Achievements:
- Arizona State University
- BSE Environmental Engineering May 2011
- Minor: Spanish
- MSE Environmental Engineering starting Fall 2011
- Research Assistant in the NSF’s Water and Environmental Technology Center
- 4.0 GPA
- International Intern with Stanley Consultants
- 2010 Engineering Student of the Year (ACEC)

Cody Anderson
Achievements:
- Arizona State University
- Pursuing a 4+1 BSE/MSE in Environmental Engineering
- Cyanobacterial growth for production of biofuels with Dr. Rittmann
- Completed FE Exam
- National Merit Scholar
- Captain of Engineering Academic Bowl Team

Chao-An Chiu
Achievements:
- Ph.D, Arizona State University
- Activated carbon application for organic removal and novel reactivation with nano-techniques
- Several Publications
- Trace Organics in Arizona Surface and Waste Waters
- Fate of Sucralose during Wastewater Treatment
- Biogenic Nanoscale Colloids in Wastewater Effluents

Eric Moody
Achievements:
- Arizona State University
- B.S. in Zoology and Biological Aspects of Conservation
- Pursuing M.S. in Biology
- Impact of reduced streamflow for riparian and aquatic food webs

Aida Cecilia Tapia-Rodriguez
Achievements:
- Ph.D in Environmental Engineering
- University of Arizona
- Biological enhancement of uranium reduction with zero-valent iron
- BSE Chemical Engineering from Autonomous University of San Luis Potosi
- Outstanding Graduate Student Award, University of Arizona, 2010-2011

Karl Wyant
Achievements:
- Arizona State University
- Ph.D Biology
- MS Ecology, Colorado State University
- BS Biology, University of Northern Colorado
- Adjunct Faculty - Department of Biology, Rio Salado Community College

Patrick Mette
Achievements:
- BSE Civil Engineering, University of Arizona
- Minor in Mechanical Engineering
- Hydrology and hydraulics
- Environmental engineering
- Research
- Desalination of CAP water at pilot scale Reverse Osmosis plant
- Solar Membrane Distillation
- Engineers Without Borders, Habitat for Humanity, Agua Prieta Family Shelters, Watershed Management Group

Arjun Krishna Venkatesan
Achievements:
- Ph.D Civil/Environmental Engineering, Arizona State University
- Identification of emerging contaminants in surface waters and sludge (biosolids)
- BS Chemical Engineering, Anna University
- MS Civil Engineering University of Nevada-Las Vegas

Michelle Barry
Achievements:
- Ph.D Civil/Environmental Engineering, Arizona State University
- Use of ozonation in advanced treatment processes
- Has worked for Carollo and Jacobs (DSWA)
- Publications:
  - Impact of Dietary, Industrial, and Water Conservation Trends on Estrogenicity of Wastewater Effluent
  - A Quick Tool for Arsenic Treatment Technology Verification when Time is Running Short for Compliance

Cindy Peterson
Achievements:
- Certificate Program Sustainability and Ecological Literacy, Rio Salado Community College
- A.A.S. Chemistry
- Lab Specialist with Severn Trent Environmental Services
- Salt River Clean-up Projects

Vanessa Chavez
Achievements:
- MSE, Environmental Engineering Arizona State University
- Investigate organic fouling of an antimicrobial coating on filtration media
- President for ASU’s student chapter for Habitat for Humanity

Mario Rojas
Achievements:
- PhD candidate in Chemical Engineering from the University of Arizona
- Experimental and computational modeling of advanced oxidation processes for water treatment, based on hydrogen peroxide photolysis
- Outstanding Graduate Student 2011
- Master degree in Material Science

In attendance to receive their scholarships are from L-R Patrick Mette, Mario Rojas, Vanessa Chavez
2011 EXHIBITING COMPANIES — EXHIBIT HALL

Accusonic Technologies, a Division of ADS
ADA Analytics – ChemScan
AdEdge Technologies
ADS Environmental Services
Advanced Leak Analysis & Solutions Inc
AERISA
Aerzen
American Cast Iron Pipe Co.
Ameron
Amiad Filtration
Andritz Separation, Inc.
APG Neuros, Inc.
Applied Products Group
Aqua Aerobic Systems
Aqualitec Corporation
Ashbrook Simon Hartley
AZ Wastewater Industries, Inc.
AZ Water Sewer Collection History Exhibit
AZURO
B&W Distributors
Baker Water Systems-Monitor
Bio-Aquatic Testing
Border Marketing, Inc.
Building Products Co.
CAD Soft Consulting
Calgon Carbon Corporation
The Cameron Group
Central Arizona Project
Chemical Feeding Technologies
CLA-VAL Company
Clow Valve Company
CMS/MORRELL
Compass Tools, Inc.
Construction Product Marketing
Coombs-Hopkins Company
Cordell Dumpster – Veyor
Corpro Companies, Inc.
Dan Foss
Dana Kepner Company
Daniel Mechanical
DEPCTO, Inc.
Dibble Engineering
Duke’s Root Control
DVK Inc., a Division of DN Tanks
East Jordan Iron Works
EEC, Inc.
Engineered Sales Company
Engineering America Southwest
Entellus
Envirogen
Felix Construction Company
ETS UV Systems
Ferguson Waterworks
Fournier
GA Industries
GE Power & Water
Gladding, McBean & Co.
Goble Sampson Associates, Inc.
Golder Associates
Grand Canyon Pump and Supply
Hach/ Marsh McInery
Harrington Industrial Plastics
Hartland Velle SW
HD Supply Co.
HD Supply Waterworks
Hennesy Equipment Sales Co.
Hennesy Mechanical
Henry Pratt Company
Hill Brothers Chemical Co.
Hobas Pipe USA
HomeServe
Hose Solutions, Inc.
Huber Technology
Hydro International
IDEXX Laboratories
IEC Supply
IES Southwest, Inc.
International Paint
Jacobi Carbons, Inc.
James, Cooke & Hobson, Inc.
Keller Electrical
Kemira
Kiewit Infrastructure West Co.
Kimley-Horn and Associates
Kruger, Inc.
Layne Christensen
Layne Christensen Water Technologies
Legend Technical Services
Leopold Company
M.E. Simpson Co., Inc.
Marsh McInery
MISCO
MJK
Montgomery & Associates
Morrison-Maierle, Inc.
Mortenson Construction
Mountain States Pipe & Supply
Mueller Co.
National Clay Pipe Institute
National Meter & Automation
National Pump Co.
NJBSoft LLC/NCS Engineers
North Star Utilities Solutions
Northwest Pipe Co.
NSF International
Orica Watercare
PACE
Parkson
PCL Construction, Inc.
Peoria Pest Control
PEPCON Systems, Inc.
PERC Water
Phoenix Pumps, Inc.
Pinnacle Uzone
Pioneer Equipment, Inc.
Pollardwater.com
Preload Inc.
Process Solutions, Inc.
Pureflow Filtration Division
Purifics
Quantum
Red Flint Sand & Gravel, LLC
Romac Industries, Inc.
Rotork Controls, Inc.
Santherm USA
Schneider Electric
Seaex, Inc.
Sensus USA
Severn Trent Services
Siemens Industry, Inc.
SIMA Southwest
SolarBee, Inc.
Southwest Controls
Spectrashield Liner Systems
Stantec Consulting Services
Steeline
SymCom
Sunrise Engineering, Inc.
Superior Tank Company, Inc.
Superior Tank Solutions, Inc.
Swan Analytical Instruments USA
Tata & Howard
Tessenderlo Kerley
TestAmerica Laboratories, Inc.
The Water Team
TMII
Trojan Technologies
U S Peroxide
Underground Solutions
USA BlueBook
Utility Service Co., Inc.
Vertech
Vulcan
Walker Process Equipment
Water Movers, Inc.
Water Technology Group
West Tech Equipment
Westtech Engineering Inc.
Western Environmental Equipment, Co.
Westfall Manufacturing Co.
Westland Resources, Inc.
Workplace Safety Specialists

TABLE TOP EXHIBITS – LOBBY AREA
AZ Water – Membership
AZ Water – Committees
AZ Water – Scholarship Endowment
Southwest Membrane Operator Association
Water Quality Technology Conference – AWWA
Water For People
Water Infrastructure Finance Authority (WIFA)
WateReuse Association
Arizona’s Water Future is Here!

84th Annual Conference & Exhibition • HIGHLIGHTS

CONFERENCE
ATTENDEES

THANK YOU
FOR ATTENDING!

Arizona’s Water Future is Here!
Arizona’s Water Future is Here!
FRESH IDEAS

CONTEST

The Young Professionals Committee Congratulates
This Year’s Fresh Ideas Winner!

MICHELLE BARRY, ASU

Michelle presented her winning presentation titled “Development of A Catalytic Ozonation Fixed Bed Reactor for Advanced Treatment of Wastewater Using Titanium Dioxide” at the AZ Water Conference. She will attend the 2011 AWWA Annual Conference & Exposition (ACE) in Washington D.C. and represent Arizona in a national Fresh Ideas poster competition.

THANK YOU, JUDGES!

- Robert Hollander, Alan Plummer Associates
- Lisa Jackson, Black and Veatch
- Reid Guzy, Black and Veatch
- Asha Pal, EMC2
- Mike Ambroziak, HDR
- Jacqueline Shaw, Malcolm Pirnie
- Laurel Passantino, Malcolm Pirnie
- Steve Davis, Malcolm Pirnie
- Kathy Mills, Mills Engineering
- Robin Bain, City of Peoria
- Erin Pysell, City of Phoenix
- Richard Sacks, City of Scottsdale
- Jim Wright, Statewide Disinfection Services Inc.

The Fresh Ideas Contest Will Return to Arizona in 2012!

One Lucky Young Professional Will Receive a FREE Trip to the 2012 AWWA Annual Conference & Exposition

To Participate, Simply Submit an Abstract for the 2012 AZ Water Annual Conference and Indicate Your Interest on the Submittal Form.

**Young Professionals are under 35 years old, or have less than 10 years of experience.**

If you have questions about this contest, are interested in participating, or would like to act as a judge, please contact Gretchen Hawkins(gahawkin@asu.edu).
84th Annual
AZ Water Conference & Exhibition

BBQ Raffle

The Young Professional Committee
would like to thank our generous
sponsors:

Sundt
HDR
Dibble Engineering

Stantec
MGC Contractors, Inc.

GHD
International

CPM
CDM

HD Supply
Waterworks

Greeley and Hansen

Carollo

Malcolm Pirnie | ArcaDis
27th Annual Tri-State Seminar on the River
Prim, Nevada
September 27-29, 2011
Excellence In Water & Wastewater Operator Training

SEMINAR REGISTRATION
Register online at www.tristateseminar.com or you can print, complete and mail the enclosed registration form with payment to:

Tri-State Seminar
Attn: Annette Duarte
P.O. Box 11220
Tucson, Arizona 85734-1220

Registration Packets for pre-registered attendees will be mailed. The packet will include name badge, receipt and drink tickets. PLEASE NO CERTIFIED MAIL.

REGISTRATION FEES
$95.00 prior to 8/31/2011
$120.00 after 8/31/2011
$30.00 Returned Check Fee will apply.

Registrations received after 9/16/2011 will not be mailed. Packets will be available for pickup at Primm Valley Resort Conference Center beginning Tuesday at 7:00 a.m.

REGISTRATION HOURS
Tuesday, September 27 through Thursday, September 29, 7:00 a.m. – 5:00 p.m.

CANCELLATIONS & REFUNDS
Written cancellation notice is required, and must be received at least 30 days prior to the conference date. A 25% service fee shall be retained on all cancellations. No refunds shall be given for cancellations made less than 30 days prior to conference.

EXHIBIT HALL HOURS
DESKT STAR ARENA @ BUDDLA BILL’S
Tuesday, September 27 from 3:30 p.m. – 7:00 p.m.
Wednesday, September 28 from 3:30 p.m. – 6:30 p.m.

NEW FOR 2011
Enjoy some downtime and the opportunity to network on Monday, September 26, 2011 from 6:00 – 10:00 by the pool at Primm Valley Resort. Free Live Music!

Refreshments and food available for purchase.

GOLF TOURNAMENT
JOIN US AT Primm Valley Golf Club for the annual golf tournament on Tuesday, September 27, 2011. Registration: 6:30 a.m. *Tee off: 8:00 a.m. *Lunch & Awards: 12:00 Noon (Cash Bar). No-Host beverage cart will be available on the course. Dress Code: Soft spikes only. Shirts with sleeves and collars, shorts must be hemmed, no athletic shorts or blue jeans.

GOLF FEES
$125.00 prior to 8/31/2011
$150.00 after 8/31/2011

GOLF TEE SPONSORSHIP
The Tri-State Golf Committee is asking for your assistance with the annual tournament. Tee sponsorships are available for $250.00. Tee Sponsorship forms are available online. Firms wishing to donate prizes should contact Mark Graham at 760-328-6896. For hole sponsorships, go to our website at www.tristateseminar.com/golf for the sponsorship flyer.

HOTELS

31900 Las Vegas Boulevard South, Primm, Nevada 89019
1 (800) FUN-STOP 1 (800) 386-7867
Hotel Code: SCT2011
Room Reservation hours: Mon. – Sun.: 7:00 A.M. – 11:00 P.M.

CHECK IN MON – FRI: 3:00 P.M.
SAT – SUN: 4:00 P.M.

CHECK OUT 12:00 P.M. (Noon)

Resorts are located just 35 miles south of Las Vegas on I-15 at the California/Nevada state line. Directions: If you’re traveling from Phoenix proceed to Laughlin, NV on 93 thru Wickenburg, AZ to Laughlin. At Searchlight, CA take 164 to I-15 turn right. Proceed 6 miles to Primm, Exit 1.

NOTE: Name and Date changes and cancellations after cutoff date will be at the hotel’s discretion.
# 27th Annual Tri-State Seminar

September 27-29, 2011 (TUESDAY—THURSDAY)

Pirim, Nevada

Make Check/Money Order Payable to: Tri-State Seminar

Payment Questions: Contact Annette Duarte @ 520-740-6500

C/O Annette Duarte, P.O. Box 11220, Tucson, AZ 85734 or 201 North Stone Avenue, 8th Floor, Tucson, AZ 85701

Please fill in all blanks.

Name: __________________________

Title: __________________________

Employer: _______________________  

Address: _________________________

(Address where Registration Packet should be mailed)

City: ___________________ State: ______ Zip: __________ Phone: _______

FAX: __________ Email: __________

Guests Attending: ________________________

Please note that Guests are not allowed to attend sessions.

Credit Card Information (Visa, MasterCard, Amex., Discover Card only)

<table>
<thead>
<tr>
<th>Credit Card Type:</th>
<th>Credit Card #:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Three Digit Code:</th>
<th>Expiration Date:</th>
</tr>
</thead>
</table>

(Found on back of card)

Cardholder Signature: ______________________

Special Services

(_____) Please check here if you require special accommodations to fully participate.

Attach a written description of your needs.

(_____) Please check here if you DO NOT wish to have your information/email addressed published/shared with our exhibitors.

---

<table>
<thead>
<tr>
<th>REGISTRATION FEES</th>
<th>Amount Enclosed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early-Registration prior to 8/31/11</td>
<td>$95.00</td>
</tr>
<tr>
<td>Registration - After 8/31/11</td>
<td>$120.00</td>
</tr>
<tr>
<td>Guest Fee</td>
<td>Number x $15.00</td>
</tr>
<tr>
<td>Golf: Registration-Prior to 8/31/11</td>
<td>Number x $125.00</td>
</tr>
<tr>
<td>Golf: Registration After 8/31/11</td>
<td>Number x $150.00</td>
</tr>
<tr>
<td>Golfers Name</td>
<td></td>
</tr>
<tr>
<td>Golfers Name</td>
<td></td>
</tr>
<tr>
<td>Golfers Name</td>
<td></td>
</tr>
<tr>
<td>Golfers Name</td>
<td></td>
</tr>
<tr>
<td>Tee Sponsorship Fee</td>
<td>$250.00</td>
</tr>
<tr>
<td>Tee Sponsor Name</td>
<td></td>
</tr>
</tbody>
</table>

Circle your Primary Certification

Arizona  California  Nevada  Other:

Please Circle your Affiliation:

Wastewater  Water

A $25.00 RE-PRINTING PACKAGE FEE WILL BE CHARGED

Refund Deadline - August 31, 2011
The Tri-State Seminar on the River Committee involving AZ Water, CWEA, and NWEA is proud to announce the 27th Annual Tri-State Seminar on the River for 2011. Our efforts continue to focus on the educational opportunities for all attendees. Our objectives are to provide each attendee with continuing education credits and professional development hours through our technical training seminars in water, wastewater, water re-use advance technologies and safety.

To make this annual meeting affordable for the operators, we are encouraging you to consider being a sponsor at this year’s event. Your sponsorship of this conference will be greatly appreciated by the committee and all the attendees.

As stated on the cover letter of this prospectus, anyone wishing to purchase a Gold or Silver sponsorship will receive preferential booth assignment (one of the 25 end caps – until they are sold out).

**SPONSORSHIP OPPORTUNITY LEVELS**

<table>
<thead>
<tr>
<th>Level</th>
<th>Price</th>
<th>Benefits</th>
</tr>
</thead>
</table>
| GOLD    | $750.00 | ~ A link on our website to your website  
~ All Silver & Copper Events |
| SILVER  | $500.00 | ~ Exhibit Hall & Registration Area  
~ Golf Tournament, Tee Sponsor  
~ Program Listing |
| COPPER  | $250.00 | ~ Golf Tournament, Tee Sponsor  
~ Program Sponsor Listing |

**Recognition Facts & Information**

Recognition will be by signage in event areas. All sponsors will be recognized in the program. **Gold Level** sponsors will also receive a link to their website on the Tri-State website.

The **Gold Level** will be recognized for all events. The **Silver Level** will include signage in the exhibit hall and registration area, a tee sponsor sign at the Golf Tournament and a listing in the program. The **Copper Level** will be recognized by a tee sponsor sign at the Golf Tournament and a listing in the program.

For **Gold Level** sponsors, if you would like your logo incorporated into the signage, please provide it in an “electronic” format such as a bmp, jpg, or wmf file. Please e-mail your logo to tri-state@mesimpson.com by June 30, 2011.

Company Name: ___________________________  
Circle Sponsorship Level: Gold Silver Copper Tee

Contact Person: ___________________________  
Circle the Credit Card Type: Amer Ex Master Card Visa

E-Mail Address: ___________________________  
Credit Card #: ___________________________

Expiration Date: ___________ Card ID Number: ___________  
Total ___________________________

Address: ___________________________  
Street Address or P.O. Box, City, ZIP, where you receive your credit card bill

If you use a credit card please be sure that you provide us with the correct name, mailing address your credit card bill is sent to along with the card ID number. This is needed for verification/authorization.

**Paying by Check** (checks payable to Tri-State Seminar on the River) Mail the Form & Check to:  
Tri-State Seminar, c/o M.E. Simpson Co., Inc., 3406 Enterprise Ave., Valparaiso, IN 46383

Questions and logos for publication should be e-mailed to: tri-state@mesimpson.com
Golf Schedule
JOIN US AT Primm Valley Golf Club for the annual golf Tournament Tuesday, September 28th, 2011. Registration: 6:30 a.m. *Tee off: 8:00 a.m. *Lunch & Awards: 12:00 noon (cash bar) No-Host beverage cart will be available on the course.

Dress Code: Soft spikes only. Shirts with sleeves and collars, shorts must be hemmed, no athletic shorts or blue jeans.

Registration
On-Line registration at the Tri-State website http://www.tristateseminar.com or mail the form below with full payment
Fees $125.00 per golfer prior to August 31, 2011; $150.00 after August 31, 2011.

Golf Tee Sponsorship
The Tri-State Golf Committee is asking for your assistance with the annual tournament. Tee sponsorships are available for $250.00. Tee Sponsorships forms are available online.

Firms wishing to donate prizes should contact Mark Graham at 760-328-6896. For hole sponsorship, go to www.tristateseminar.com/golf for the sponsorship flyer.

GOLF REGISTRATION FORM

Player(s) Names
1)______________________________  2)____________________________
3)______________________________  4)____________________________

Billing Information:
Name ___________________________ Company____________________________
Address_________________________________________________________________
City_________________________  State ____      Zip_________
Phone __________________       Fax __________________    Email________________

Fees & Sponsorships

<table>
<thead>
<tr>
<th></th>
<th>Before 8/31/2011</th>
<th># Players</th>
<th>$125.00</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>After 8/31/2011</td>
<td># Players</td>
<td>$150.00</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>Tee Sponsorship</td>
<td># Signs</td>
<td>$250.00</td>
<td>$</td>
<td></td>
</tr>
</tbody>
</table>

Golf Total  TOTAL  $

Mail Registration Form with Check, Money Order or Credit Card payable to:
Tri-State Seminar on the River
Attn: Annette Duarte
P.O. Box 11220
Tucson, AZ 85734-1220

Check or Money Order Enclosed □ Yes □ No or Credit Card Information (Visa/MasterCard only)
Credit Card Type ___________________ Credit Card # ___________________  
Three Digit Security Code ________ Expiration Date ___________________
## TENTATIVE PROGRAM

### TRI-BORDER SEMINAR ON THE RIVER 2011

**Location:** Primm Valley Ballroom

**Date:** Tuesday, September 27, 2011

### WASTEWATER COLLECTION TRACK

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
</tbody>
</table>

### TENTATIVE PROGRAM

**Location:** Primm Valley Ballroom

**Date:** Tuesday, September 27, 2011

### WASTEWATER COLLECTION TRACK

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
</tbody>
</table>

### WASTEWATER COLLECTION TRACK

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
</tbody>
</table>

### WASTEWATER COLLECTION TRACK

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
</tbody>
</table>

### WASTEWATER COLLECTION TRACK

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
</tbody>
</table>

### WASTEWATER COLLECTION TRACK

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
</tbody>
</table>

### WASTEWATER COLLECTION TRACK

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>2:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>3:00</td>
<td>Maintenance Track</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>9:20 A.M.</td>
<td>Water Loss Control, Valuing the Testing</td>
<td></td>
</tr>
<tr>
<td>9:40 A.M.</td>
<td>Trenchless Pipeline Rehabilitation</td>
<td></td>
</tr>
<tr>
<td>10:00 A.M.</td>
<td>Pipeline Cleaning, construction and maintenance Part 1</td>
<td></td>
</tr>
<tr>
<td>10:20 A.M.</td>
<td>Pump Repair, construction and maintenance Part 1</td>
<td></td>
</tr>
<tr>
<td>10:40 A.M.</td>
<td>WATER WASTE WATER TRACK</td>
<td></td>
</tr>
<tr>
<td>11:00 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
<td></td>
</tr>
<tr>
<td>11:20 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
<td></td>
</tr>
<tr>
<td>11:40 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
<td></td>
</tr>
<tr>
<td>12:00 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
<td></td>
</tr>
<tr>
<td>12:20 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 3</td>
<td></td>
</tr>
<tr>
<td>12:40 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 4</td>
<td></td>
</tr>
<tr>
<td>1:00 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
<td></td>
</tr>
<tr>
<td>1:20 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 5</td>
<td></td>
</tr>
<tr>
<td>1:40 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
<td></td>
</tr>
<tr>
<td>2:00 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 6</td>
<td></td>
</tr>
<tr>
<td>2:20 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
<td></td>
</tr>
<tr>
<td>2:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>3:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>3:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>3:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>4:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>4:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>4:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>5:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>5:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
<tr>
<td>5:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
<td></td>
</tr>
</tbody>
</table>

**TENTATIVE PROGRAM**

**TRI-STATE SEMINAR ON THE RIVER 2011**

**WEDNESDAY, SEPTEMBER 28, 2011**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:20 A.M.</td>
<td>Water Loss Control, Valuing the Testing</td>
</tr>
<tr>
<td>9:40 A.M.</td>
<td>Trenchless Pipeline Rehabilitation</td>
</tr>
<tr>
<td>10:00 A.M.</td>
<td>Pipeline Cleaning, construction and maintenance Part 1</td>
</tr>
<tr>
<td>10:20 A.M.</td>
<td>Pump Repair, construction and maintenance Part 1</td>
</tr>
<tr>
<td>10:40 A.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>11:00 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
</tr>
<tr>
<td>11:20 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
</tr>
<tr>
<td>11:40 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
</tr>
<tr>
<td>12:00 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>12:20 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 3</td>
</tr>
<tr>
<td>12:40 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 4</td>
</tr>
<tr>
<td>1:00 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>1:20 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 5</td>
</tr>
<tr>
<td>1:40 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>2:00 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 6</td>
</tr>
<tr>
<td>2:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>2:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>3:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>3:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>3:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>4:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>4:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>4:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>5:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>5:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>5:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
</tbody>
</table>

**GROUND WATER SURFACE WATER**

**WEDNESDAY, SEPTEMBER 28, 2011**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:20 A.M.</td>
<td>Water Loss Control, Valuing the Testing</td>
</tr>
<tr>
<td>9:40 A.M.</td>
<td>Trenchless Pipeline Rehabilitation</td>
</tr>
<tr>
<td>10:00 A.M.</td>
<td>Pipeline Cleaning, construction and maintenance Part 1</td>
</tr>
<tr>
<td>10:20 A.M.</td>
<td>Pump Repair, construction and maintenance Part 1</td>
</tr>
<tr>
<td>10:40 A.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>11:00 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
</tr>
<tr>
<td>11:20 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
</tr>
<tr>
<td>11:40 A.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 2</td>
</tr>
<tr>
<td>12:00 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>12:20 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 3</td>
</tr>
<tr>
<td>12:40 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 4</td>
</tr>
<tr>
<td>1:00 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>1:20 P.M.</td>
<td>WATER TANK SELECTION, CONSTRUCTION AND MAINTENANCE Part 5</td>
</tr>
<tr>
<td>1:40 P.M.</td>
<td>WATER WASTE WATER TRACK</td>
</tr>
<tr>
<td>2:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>2:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>2:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>3:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>3:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>3:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>4:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>4:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>4:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>5:00 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>5:20 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>5:40 P.M.</td>
<td>ELECTRICAL MAINTENANCE FOR SAFETY PART 1</td>
</tr>
<tr>
<td>TIME</td>
<td>SESSION</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9:20 A.M.</td>
<td>1. WATER DISTRIBUTION TRACK</td>
</tr>
<tr>
<td>9:30 - 10:30</td>
<td>WATER SYSTEMS - STATE AND LOCAL ENERGY MANAGEMENT &amp; PUMP OPTIMIZATION SOLUTION</td>
</tr>
<tr>
<td>10:40 - 11:30</td>
<td>WATER SYSTEMS - ANALYSIS OF LARGE DISTRIBUTION SYSTEMS IN HONDURAS</td>
</tr>
<tr>
<td>11:40 - 12:30</td>
<td>WATER SYSTEMS - ANALYSIS OF LARGE DISTRIBUTION SYSTEMS IN MEXICO</td>
</tr>
<tr>
<td>1:40 - 2:30</td>
<td>WATER SYSTEMS - MARK F. SAVORIO AND THOMAS A. MARTINEZ, WESTIS AND RESOURCES, INC</td>
</tr>
<tr>
<td>2:40 - 3:30</td>
<td>WATER SYSTEMS - MARK F. SAVORIO AND THOMAS A. MARTINEZ, WESTIS AND RESOURCES, INC</td>
</tr>
<tr>
<td>3:40 - 4:30</td>
<td>WATER SYSTEMS - JERRY H. BROWN, RIVER BEND UTILITIES</td>
</tr>
<tr>
<td>4:40 - 5:30</td>
<td>WATER SYSTEMS - JERRY H. BROWN, RIVER BEND UTILITIES</td>
</tr>
<tr>
<td>5:40 - 6:30</td>
<td>WATER SYSTEMS - JERRY H. BROWN, RIVER BEND UTILITIES</td>
</tr>
<tr>
<td>7:30 - 8:30</td>
<td>WATER SYSTEMS - JERRY H. BROWN, RIVER BEND UTILITIES</td>
</tr>
<tr>
<td>8:30 - 9:20</td>
<td>WATER SYSTEMS - JERRY H. BROWN, RIVER BEND UTILITIES</td>
</tr>
<tr>
<td>9:20 A.M.</td>
<td>2. SEWER LID TRACK</td>
</tr>
<tr>
<td>9:30 - 10:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>10:40 - 11:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>11:40 - 12:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>1:40 - 2:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>2:40 - 3:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>3:40 - 4:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>4:40 - 5:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>5:40 - 6:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>7:30 - 8:30</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>8:30 - 9:20</td>
<td>SEWER LID TRACK - BRADUOX, INC.</td>
</tr>
<tr>
<td>9:20 A.M.</td>
<td>3. WATER TREATMENT TRACK</td>
</tr>
<tr>
<td>9:30 - 10:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>10:40 - 11:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>11:40 - 12:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>1:40 - 2:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>2:40 - 3:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>3:40 - 4:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>4:40 - 5:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>5:40 - 6:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>7:30 - 8:30</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>8:30 - 9:20</td>
<td>WATER TREATMENT TRACK - CARHART, E. N. NATIONAL WATER TREATMENT SERVICES</td>
</tr>
<tr>
<td>9:20 A.M.</td>
<td>4. WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>9:30 - 10:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>10:40 - 11:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>11:40 - 12:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>1:40 - 2:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>2:40 - 3:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>3:40 - 4:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>4:40 - 5:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>5:40 - 6:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>7:30 - 8:30</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
<tr>
<td>8:30 - 9:20</td>
<td>WATER WASTE MANAGEMENT &amp; ENVIRONMENTAL COMPLIANCE TRACK</td>
</tr>
</tbody>
</table>
professional

BLACK & VEATCH
Building a world of difference.

Phoenix 602-381-4400
weknowwater@bv.com  www.bv.com

COOMBS-HOPKINS
www.coombshopkins.com
Jason S. Vernon, P.E.
President
668 North 44th Street, Suite 251
Phoenix, AZ 85008
Email: jason@coombshopkins.com
“Representing quality equipment for the treatment of water and wastewater”

Dibble Engineering
Engineering creative solutions for Arizona water, wastewater & reclaimed water systems since 1962
www.dibblecorp.com

INNOVATIVE Technology & Management
CONSULTING
Phoenix: 602.275.0651
Tucson: 520.299.0992
wwwema-inc.com • info@ema-inc.com

COOMBS-HOPKINS
www.coombshopkins.com
Jason S. Vernon, P.E.
President
668 North 44th Street, Suite 251
Phoenix, AZ 85008
Email: jason@coombshopkins.com
“Representing quality equipment for the treatment of water and wastewater”

Dibble Engineering
Engineering creative solutions for Arizona water, wastewater & reclaimed water systems since 1962
www.dibblecorp.com

INNOVATIVE Technology & Management
CONSULTING
Phoenix: 602.275.0651
Tucson: 520.299.0992
wwwema-inc.com • info@ema-inc.com

Kennedy/Jenks Consultants
PHOENIX
3003 North Central Avenue, Suite 1150
Phoenix, AZ 85012
(602) 274-0886
RayMontoya@kennedyjenks.com / KimTanner@kennedyjenks.com
www.kennedyjenks.com
enduring relationships • trusted expertise • promises delivered

MISCO WATER
DENNIS D. MEMRIE
4500 Atherton Way • Albuquerque, NM 87120
T 505.898.8728 • F 505.898.8729 • E demrie@att.net
www.miscowater.com

Environmental Services
Flood Control & Drainage
Land Development
Land Surveying
Natural Resources
Transportation
Water & Wastewater
P I P E L I N E  A N S W E R S

SEE QUESTIONS ON PAGE 20

WATER TREATMENT GRADES 1 & 2

WATER TREATMENT GRADES 3 & 4

WATER DISTRIBUTION GRADES 1 & 2

WATER DISTRIBUTION GRADES 3 & 4

WASTEWATER COLLECTION GRADES 1 & 2

WASTEWATER COLLECTION GRADES 3 & 4

WASTEWATER TREATMENT GRADES 1 & 2

WASTEWATER TREATMENT GRADES 3 & 4
“Water and Wastewater Operations and Maintenance Service Solutions”

For over 30 years our goal has been dedicated to developing and providing programs and services designed to maximize peak performance for our clients’ water distribution and wastewater collection systems. We provide our clients the highest quality Technical and Professional Services, with highly skilled and trained professionals using state-of-the-art technologies. With this as our mission, we provide our services to our clients knowing that the public has the implicit faith that "the water is always safe to drink".

The Goal is Crystal Clear

Industry Leaders Specializing in

- Water Loss Control Services
  - Water Audits
  - Large Meter, Evaluation, Testing and Repair
  - Leak Surveys/Leak Pinpointing
- Asset Management Services
  - Valve Assessment Programs
  - Fire Hydrant Assessment/Maintenance Programs
  - Fire Hydrant Flow/Water main Capacity Testing Programs
- Wastewater Services
  - Sewer Flow Monitoring
  - Manhole Inspection & Inventory
  - Smoke Testing
- Water Quality Services
  - Unidirectional Flushing Programs
  - Cross Connection Control Survey & Inventory
  - Backflow Management, Testing & Maintenance

salesinfo@mesimpson.com
www.mesimpson.com

Phone: (800) 255-1521
Fax: (888) 531-2444

Valparaiso, IN • Phoenix, AZ • San Francisco, CA • Dyer, IN • Indianapolis, IN • Waukegan, IL • Savage, MN • Baltimore, MD • Gwinnett County, GA • Baltimore, MD • Chicago, IL
Retrofit Traveling Bridge Sand Filters with AquaDiamond® Cloth Media Filters for 2-3 times the flow capacity with an equivalent footprint.

AquaDiamond® Cloth Media Filters have much to offer in the way of design and performance compared to sand media filters.

- Utilize OptiFiber® pile cloth filtration media instead of sand media.
- Lower operation and maintenance costs.
- Higher solids loading per square foot of media.
- Reduced backwash water volume.
- Reuse quality effluent.

Retrofit into existing concrete traveling bridge filters with minimum civil work, or install in new plants.

Visit www.aqua-aerobic.com/library-filtration.asp to view additional photos and to read AquaDiamond® Cloth Media Filter Success Stories.