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2011

The Official Publication of the Water Environment Association of Utah



DIGESTED news

Celebrating 50 Years of Clean Water

2011

**WEAU ANNUAL
CONFERENCE**



APRIL 5 - 8 • DIXIE CENTER • ST. GEORGE, UTAH

INSIDE:

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FEATURES

2011 WEAU Annual Conference **7**
WEAU website refreshed **28**
Wastewater diving **30**
Automatic water sampling **41**
WEF, AWWA to hold first joint Fly-In **45**

Departments

President's message **4** PWO **32**
Collections **24** Ad index **46**
Community impact **27**

Message from the editor

The fact that you are reading this message denotes that spring is just around the corner and this means that our annual sojourn is soon upon us. I look forward to the annual conference each year. I have been able to attend many of the conferences and am thankful to Central Valley for supporting me in attending the conference. In this issue, you will see the DRAFT schedule of the conference as well as flyers for the various activities being sponsored. Take a look at the classes being offered and start to plan on which ones you are going to attend. Each year, it just seems to get better and better. As with any educational opportunity, the more a person puts into the opportunity, the more the person tends to receive.

We are entering the second year of our contract with Craig Kelman & Associates (CKA). The association with CKA has definitely been a winning one for WEAU. I hope that you have enjoyed the new format of the magazine that is intended to be a tool for those who read it.

I welcome comments and suggestions. If anyone is interested in submitting quarterly safety articles, please contact me. I think a safety section would be beneficial. The magazine is only as good as its content. If there is an area you think would be beneficial to include, drop me a line and let me know.

See you in St. George.

Sharon Siebold, Editor
siebolds@cvurf.org





Jill Houston

Working toward common solutions

It is that time of year again, when the WEAU Board is preparing for the annual conference at the Dixie Center in St. George. Looking back at the past year, I am amazed at how fast the year has gone.

I have learned a great deal while working with the members of the WEAU Board. Our Board members are passionate, dedicated and involved in preserving and enhancing water quality. We disagree on how that should be accomplished at times, but those differences makes us a better association.


In the past few weeks, I have attended meetings and workshops where people with varying interests and backgrounds gathered together to come up with solutions to a variety of issues. Whether the subject was development, zoning, water quality, or water quantity, everyone had an opinion and a solution based on how the decision would affect them or their interest group. There have been times when opposing camps could not agree on the problem (or if there was a problem). On those rare occasions, the groups would collaborate and compromise in working toward a

solution. In most cases, it has required more than one meeting to get to an agreeable and workable solution.

WEAU has a diverse membership. We are all concerned about clean water, but we look at the challenges and solutions in different ways. As a water quality industry, we realize that clean water is everyone's responsibility and that it requires multiple solutions. I am proud to be a member of this association and work in the wastewater industry.

The annual conference will have interesting presentations dealing with water quality. In an effort toward making constant improvement, we are trying some new things at this year's conference. I think it will be a great event and hope that you can attend. The plant and individual awards will be presented and the operations challenge teams will compete in a competition that is exciting to watch.

I have enjoyed the association of the individuals in the wastewater industry and in WEAU. Thanks to all of you for a great year. [DR](#)



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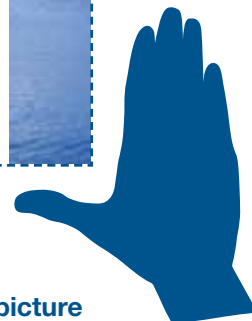
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2011 PRE-CONFERENCE WORKSHOP

Challenges and Strategies to Address Utah's Aging Wastewater Infrastructure

Join us at the WEAU Pre-Conference this year and jumpstart your wastewater emersion learning. Learn about the state of Utah's wastewater collection and treatment infrastructure and the many challenges our industry faces to keep heads above water amid ever tightening budgets and increasing regulatory pressure. Strategies for improved management of our wastewater infrastructure assets will be reviewed and opportunities for effectively funding improvements will be presented. Included will be real-world examples of how management and engineered systems are being used in the state to overcome some of the challenges to rehabilitate and replace old infrastructure. Register online at <http://www.weau.org/resources/upcoming-seminars>. The cost is \$100.00 including break snacks and lunch. Do not miss this program:

8:00 - 9:00 AM

SESSION 1: Utah's Aging Sewerage Infrastructure – An Assessment of Utah's POTW Infrastructure and the Funding Needs to Maintain Current Levels of Service – Paul Krauth, DWQ

9:15 - 10:30 AM

SESSION 2: Asset Management Strategies for Addressing Aging Wastewater Infrastructure – How is it Best Implemented by Public Utilities? – Speaker TBA

10:45 - 12:00 PM

SESSION 3: Financial Strategies for Aging Infrastructure – Addressing Budget Shortfalls – Johnathan Ward, Zions Bank

LUNCH: 12:00 - 1:30 PM

1:30 - 2:30 PM

SESSION 4: The Role of Asset Management in Salt Lake City's 1800 North Sewer Rehabilitation Project – Collection System Case Study – Mark Stanley, Salt Lake City Public Utilities

2:45 - 3:45 PM

SESSION 5: Upgrading Salt Lake City's Digesters – Treatment Plant Case Study – Giles Demke, Salt Lake City Water Reclamation Facility




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2010-2011 WEF TREASURER IN ATTENDANCE



Chris Browning is the 2010-2011 Treasurer of the Water Environment Federation (WEF), an international organization of water quality professionals headquartered in Alexandria, VA.

Chris is the Utility Management Director with McKim and Creed, a full-service consulting firm offering a range of engineering, surveying, and planning

services with offices throughout the southeast. Chris heads up the Water/Wastewater Utility Consulting practice in Suwanee, GA, where his duties include client services, business development and technical assistance, specializing in utility management services with a focus on improving operations and management.

During his more than 30 years in the water profession, Chris has developed extensive senior level management experience in various organizations including Gwinnett County, GA; the City of Marietta, GA; Cobb County, GA; and Columbus Water Works in Columbus, GA.

A WEF member since 1977, Chris has held multiple leadership and committee roles within WEF. He has served on the House of Delegates and the Long Range Planning Committee, as well as Chair of the Constitution and Bylaws Committee and the HOD Parliamentarian.

Also an active member of the Georgia Association of Water Professionals (GAWP), Chris has served on the GAWP Board of Directors since 1994. He has served as the organization's WEF Section Chair, the PWOD Director and, currently, as Chair

of the Georgia Water and Waste Water Institute. His other professional affiliations include the American Water Works Association, American Public Works Association, Phi Kappa Phi National Honor Society, and the Select Society of Sanitary Sludge Shovelers.

He has been honored with the WEF Service Award (1997), WEF Outgoing Director Award (2005), Arthur Sidney Bedell Award (2004), WEF Past Chair Award (2009), GAWP Life Member Award (2008), GAWP Charles Jones Award (2005), and GAWP Hugh A. Wyckoff Award (1996).

Chris is a Class 1 Wastewater Treatment Plant Operator and a Class 3 Water Treatment Plant Operator in the state of Georgia. He received his B.S. in Civil Engineering from Southern Polytechnic State University (Marietta, GA) and a Master of Public Administration from Columbus State University (Columbus, GA).

ABOUT WEF

Formed in 1928, the Water Environment Federation (WEF) is a not-for-profit technical and educational organization with 36,000 individual members and 75 affiliated Member Associations representing water quality professionals around the world. WEF and its Member Associations proudly work to achieve our mission of preserving and enhancing the global water environment.



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WHERE THE 'LOCALS' GO IN ST. GEORGE

By Eric Richins



For all of you frozen people that live in places other than Utah's Dixie, I would like to give you some ideas of where the locals go to enjoy St. George. There are numerous events, activities and places to have a great time.

EATING OUT

Here in the St. George area we have a little of everything. Some of the places that workers from the facility like to go are:

- The ladies in the lab really enjoy The Painted Pony, The Gun Barrel and Neilson's Frozen Custard.
- Ben Ford enjoys Ichiban Sushi, Ahi's Taste of Asia and Costco hot dogs.
- The crew here at the wastewater facility like to go to Made in Brazil, Samurai 21 and Golden Corral.
- For those that have brought the kids, Pirate Island Pizza is good place to go.

THINGS TO DO

- Dinosaur Discovery at Johnson Farm and the Rosenbruch World Wildlife Museum are great for those that like to see and learn about past and present creatures.
- There are 12 golf courses between St. George and Hurricane.
- This year there is something new in downtown St. George. We have the Dixie Igloo ice skating rink. It will remain up until April, so try it out.

- There are plenty of walking paths/trails surrounding the Dixie Center so you can get a quick run in before the classes start.
- If any of you plan on spending extra time down here, spend a day in Zion National Park, Silver Reef, or Pine Valley. All of these are great places to learn and see nature and history come alive. Hope this helps you enjoy your stay with us in Utah's Dixie.



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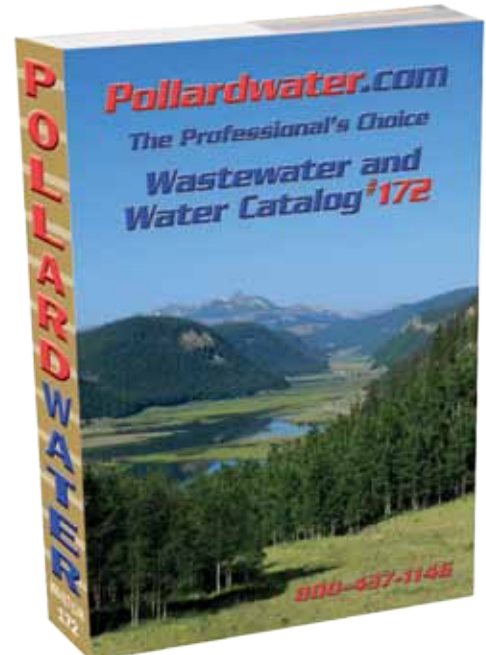


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TECHNICAL PROGRAM

WEDNESDAY APRIL 6				
Session	Sunbrook A	Sunbrook B	Sunbrook C	Entrada A
A	Wastewater Facility Planning - <i>Moderator - TBD</i>	Risk/Safety (half session) Residuals (half session) - <i>Moderator - TBD</i>	Misc. Topics (half session) Environ. Issues (half session) - <i>Moderator - TBD</i>	Collection Systems - <i>Moderator - Greg Neff</i>
1:40 - 2:20	Wastewater Capital Facility Planning - <i>Ryan Jolley</i>	Managing Wastewater Utility Risk & Resilience with the New Water Sector RAMCAP J-100 Standard - <i>Bryon Elwell</i>	Solving the Government Customer Service Puzzle - <i>Doug Folsom</i>	Economics of Wastewater Flow Modeling - <i>Lori Weiss</i>
2:20 - 3:00	The Impacts of Water Conservation Efforts on Plant Influent Wastewater Quality - <i>Nathan Zaugg</i>	Confined Space Safety - <i>Craig Anderson</i>	LEED Buildings at Wastewater Treatment Plants - <i>Jason Broome</i>	Is Your Collection System Data Believable? - <i>Robert DiNatale</i>
3:00 - 3:40	Break - Exhibit Hall	Break - Exhibit Hall	Break - Exhibit Hall	Break - Exhibit Hall
3:40 - 4:20	Use of a Whole Plant Process Simulator and Cost Estimating Tool For Efficient Wastewater Facility Planning - <i>William Leaf</i>	Data Collection and Modeling to Predict Patterns of Sediment Transport and Water Quality Measures - <i>Hussien Batt</i>	Groundwater Remediation: A Case Study - <i>Kiran Bbayani</i>	Concrete Stabilization Technologies - Stopping Infiltration - <i>Kent A Nichols</i>
4:20 - 5:00	Water Market Assessment and Future Water Pricing Impact on Reuse Projects - <i>Trevor Lindley</i>	Impacts of Solids Reduction on Biosolids Quality and Pretreatment Local Limits - <i>Leland Myers</i>	To Study the Impact of Tailing Dam Waste Water and Fresh Water Pond on Lead Zinc Mine Using Water Quality as a Parameter - <i>R. S. Rathore</i>	Handling Wastewater Overflows from Small Contractor Spills to Large SSOs. - <i>Presenter - TBD</i>
THURSDAY APRIL 7				
Session	Sunbrook A	Sunbrook B	Sunbrook C	Entrada A
B	PWO and YP Wastewater Training Course - <i>Moderator - TBD</i>	Residuals - <i>Moderator - TBD</i>	Nutrients - <i>Moderator - Ramesh Goel</i>	Collection Systems - <i>Moderator - Lonn Rasmussen</i>
8:40 - 9:20	Pumps and Pumping - <i>Presenter - TBD</i>	Rotating Belt Screen For Primary Treatment: A Case Study in Temonton, Utah - <i>Mark Lopp</i>	Nutrients - Current Trends and What Else We Can Do About These - <i>Ramesh Goel</i>	How Do I Get the Stink Out of My Sewer? - <i>Blaine Bowden</i>
9:20 - 10:00	Preliminary and Primary Treatment - <i>Presenter - TBD</i>	What Are the Best and Most Sustainable Processes for Thickening and Dewatering of Wastewater Plant Solids - <i>David Oerke</i>	Status of Ecological and Economic Studies in Support of Nutrient Criteria Implementation - <i>Nicholas von Stackelberg</i>	GIS Applications - <i>Presenter - TBD</i>
10:00 - 10:40	Break - Exhibit Hall	Break - Exhibit Hall	Break - Exhibit Hall	Break - Exhibit Hall
10:40 - 11:20	Laboratory Procedures and Practices - <i>Presenter - TBD</i>	Biosolids Class A Process Innovation: Solar Fueled Thermal Processes - <i>Dru Whitlock</i>	Nutrient Recovery: Improving the Wastewater Treatment Industries' Role in Food Security While Improving Facility Operations and Economics - <i>Matthew Kuzma</i>	South Jordan Wastewater Pump Station - <i>Brent Packer</i>
11:20 - 12:00	Wastewater Math and Then Some - <i>Sharon Siebold</i>	Two-Phase Digestion Increases Treatment Capacity with Minimum Additional Tankage - <i>Rudy Kilian</i>	Treatment Wetlands for Nutrient Reductions: Capabilities and Constraints - <i>Tania Dattaa</i>	Pump Station Maintenance - <i>Presenter - TBD</i>

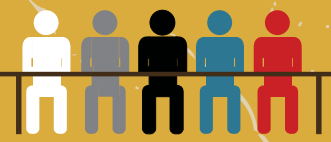


Session	Sunbrook A	Sunbrook B	Sunbrook C	Entrada A
C	PWO and YP Wastewater Training Course - <i>Moderator - TBD</i>	Residuals - <i>Moderator - TBD</i>	Nutrients - <i>Moderator - Ramesh Goel</i>	Collection Systems - <i>Moderator - Brent Packer</i>
1:40 - 2:20	Secondary Treatment/Activated Sludge - <i>Presenter - TBD</i>	NDSB Biosolids Process Expansion - Minimizing Capital Facilities using Thickening and Temperature Phase Anaerobic Digestion - <i>Phil Heck</i>	A Study of the Comparison of Primary Production with In-situ Monitoring in Northern Utah Streams for TMDL Assessment - <i>Ruba Mohamed</i>	Las Vegas Rehab. - <i>Greg Gould</i>
2:20 - 3:00	Digestion and You - <i>Presenter - TBD</i>	The Potential for Combined Heat and Power, CHP, at ReWa's 5 Anaerobic Digestion Plants - <i>Stephan Graef</i>	Who is Responsible - Wastewater Effluents or Sediment Water Interactions or None in Jordan River for its Current Water Quality - <i>Ramesh Goel</i>	Odor and Corrosion in Collection Systems - <i>Harvey Sorensen</i>
3:00 - 3:40	Break - Exhibit Hall	Break - Exhibit Hall	Break - Exhibit Hall	Break - Exhibit Hall
3:40 - 4:20	Operating and Maintaining Equipment - <i>Presenter - TBD</i>	Comparison of Methodologies for Aeration System Design - <i>Jim Goodley</i>	Jordan River TMDL: What is a Phased Approach and Why Is It Right for the Jordan River? - <i>Hilary Arens</i>	Pipeline Repair and Rehabilitation - <i>Dannie Pollock</i>
4:20 - 5:00	Examine Your Test - Jeopardy Style - <i>Presenter - TBD</i>	Innovative Designs for Upgrading the Treatment Capacity of Lagoon Based WWTP - <i>Darin Starr</i>	A Collaborative Approach to Calibration of a Water Quality Model for the Jordan River TMDL - <i>Nicholas von Stackelberg</i>	The Evolution of Corrosion Resistant Manholes - <i>Phil Gale</i>

FRIDAY APRIL 8

Session	Sunbrook A	Sunbrook B	Sunbrook C	Entrada A
D	PWO and YP Wastewater Training Course - <i>Moderator - TBD</i>	Electrical and I&C - <i>Moderator - TBD</i>	Wastewater Equipment and Operations - <i>Moderator - TBD</i>	Collection Systems - <i>Moderator - Michael Foerster</i>
8:40 - 9:20	Disinfection Processes - <i>Presenter - TBD</i>	Reducing Energy Costs Through Smart Pump Control - <i>Michael Gavan</i>	Cleaning up the Dirty Jobs! - Labor and Manpower Savings with High Pressure Automatic Spray Cleaning Techniques - <i>Shawna Gill</i>	Mobile Maps and Data Using Mapguide Open Source (FREE) - <i>Greg Neff</i>
9:20 - 10:00	Nitrogen/Denitrification - <i>Steven Myers</i>	Arc Flash Solutions: Are you Compliant? - <i>David Hannemann</i>	Managing H ₂ S: Odors & Corrosion Control - <i>Rick Allen</i>	Large Diameter Pipe Selection - <i>Presenter - TBD</i>
10:00 - 10:40	Logan Wastewater Treatment Lagoons: Phosphorus Reduction Alternatives - <i>Riley Bradshaw, Camilla Lyman, Diana Pribble</i>	Protecting Your Critical Assets through Partial Discharge Testing - <i>David Hannemann</i>	On Site Generation – The Past, The Present, The Future - How OSG has Become the Easiest, Safest, and Most Operator Friendly Method of Disinfection - <i>Tom Muilenberg</i>	Collection Systems Jeopardy - <i>Michael Foerster</i>

The Draft Technical Program is for information purposes only. It should not be relied upon by presenters to make travel arrangements and accommodations for the WEAU Conference. Presenters will be provided written notification of the final schedule by mail.



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10 FUN AND FREE ACTIVITIES

Provided Courtesy of the St. George Area Chamber of Commerce
Written by: Susi Lafaele

There is always something to do here in St. George. Here are a few fun and free activities for you and the whole family.

1. TAKE A DRIVE

One of the best ways to see scenic southern Utah is by car. Washington County is known for its picturesque landscape. Drive through parts of Dixie National Forest's nearly two million acres, making it the largest national forest in the state, or drive 20 miles through the Virgin River Gorge, replete with local flora and fauna, and breathtaking views of steep cliff walls.

2. SPRINGDALE

Known as 'The Gateway to Zion National Park,' Springdale lies at the park's southwest entrance and is the closest gateway city. It is a destination resort for the outdoor lover and a haven for artists. Walk the main street of Springdale and catch sights of an elk and llama farm, or stop and browse any number of art galleries and antique shops. Vivid and striking views of Zion National Park welcome the visitor to the quaint town of Springdale.

3. THE ST. GEORGE CHESS CENTER

Named "Chess Center of the Year" in 2006 by the U.S. Chess Federation, the St. George Chess Center invites both the young and old to join millions of others in one of the world's most popular games. With murals of princesses and knights, and dragons and castles, stop by and learn more about chess grandmaster Igor Ivanov, who once called Utah home. For more information, visit www.stgeorgechess.com or call 435-656-1966.

4. VISIT A GHOST TOWN

With 28 ghost towns within a 50-mile radius of St. George, the most popular remains the town of Grafton. The town of 250 was soon deserted after frequent Indian attacks and flooding forced residents to better land. Travel over a truss bridge to Grafton's old cemetery that gives telling insights into just what the early pioneers may have endured; many of the headstones read "killed by Indians." While in Grafton, picture yourself where Robert Redford may have stood in the classic film "Butch Cassidy and the Sundance Kid."

5. TAKE A TOUR BACK THROUGH TIME

Visit any one of southern Utah's early settler museums. Nestled near downtown St. George, the Daughters of Utah Pioneers brings an extraordinary collection of artifacts from those who tamed the west. If you want to fit in with the locals, learn how to pronounce the nearby town of "Hurricane" by visiting their Heritage Park Museum.

6. EXPLORE THE SILVER TRAIL

At its peak, the small mining town of Silver Reef had almost 2,000 residents, complete with grocery stores, restaurants, saloons, and church. Although silver hasn't been extracted in over 100 years, visit some of the few places where silver was discovered, the Old Silver Reef-Wells Fargo Office and Rice Bank Building.

7. CLIMB EVERY MOUNTAIN

With an elevation of 6,500 feet, escape the desert heat with a short drive to Pine Valley Mountain. While there, enjoy the area's famous landmark the Pine Valley Chapel, designed in 1868 by shipbuilder Ebenezer Bryce. It was built as the hull of a ship, upside down using wooden beams bound together with pegs. Also enjoy the rustle of the wind through the trees on one of Pine Valley's 200 miles of trails.

8. CREAM OF THE CROP

The small hometown community of Santa Clara boasts the popular Frei's Fruit Market. Full of vine ripened fruits and vegetables; the locally grown produce stand welcomes visitors as part of the town's new historic district. Tall sycamores line the main street that shade humble pioneer structures and landmarks, and citizens remember their ancestors with the annual Swiss Days Celebration held every September. Don't forget to visit the Jacob Hamblin Home and Museum, constructed in 1862 with local red sandstone.

9. ROCK OUT

If you can't get enough of St. George's panoramic beauty, see it from above. North of the city in Pioneer Park lies the famous DIXIE rock, where you can take that perfect picture that overlooks the city, or rock out below in the Bloomington Caves. See how the ancient peoples used rock at the Ivins Petroglyphs with 997 distinct drawings on a 300 foot cliff.

10. ARE YOU FROM DIXIE?

With 27 historical sites on map, the walking tour of St. George begins at the Old Washington County Courthouse that was built 120 years ago. The Old Pioneer Courthouse now houses the St. George Area Chamber of Commerce and consists of a visitor information room. Make your way down Main Street to the Town Square, where you'll find a desert oasis with a fountain and water walk.

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A collage of industrial wastewater treatment equipment, including large green pumps and metal structures. Overlaid on the collage is a circular logo for "Quality Chopper Pumps" celebrating "50 Years" from "1960 - 2010" by "VAUGHAN COMPANY, INC.". The text "UNMATCHED RELIABILITY" is written in large, bold, green letters across the center of the collage.

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web: www.chopperpumps.com & www.rotamix.com



PARTNERS PROGRAM

Note: there will be no formal partners program this year. Attendees may purchase lunches and banquet dinners for guests. The following is a schedule of events for partners to organize on their own.

WEDNESDAY, APRIL 6

9:00 am – Noon: Operators Challenge

Morning options:

Summit Athletic Club; prices are additional:

2-day unlimited pass for \$21

Single-day pass for \$15

Tennis lesson for \$35 per lesson one/two people

Regularly scheduled yoga or fitness training included in pass

Noon – 1:30 pm: Opening General Luncheon

Afternoon options: See Morning options

Golf Lessons - price is additional:

\$75 per hour for up to 10 people; must be done by 3 pm; sign up at registration; contact Jeff Beckman for questions at (801) 495-2224 or at jbeckman@bowencollins.com.

THURSDAY, APRIL 7

9:30 am – Noon:

Options: See April 6 Morning

Noon Lunch on your own

2:00 pm – 4:00 pm

Options: See April 6 Morning

7:00 pm – 9:00 pm: Banquet

2011 YOUNG PROFESSIONALS ACTIVITIES

- Have you worked in the wastewater field for less than five years?
- Are you 35 years old or younger?
- Are you new to WEAU or a first time conference attendee?
- If you answered YES to ANY of these questions,

YOU ARE A WEAU YOUNG PROFESSIONAL

This includes students, operators, scientists, engineers, administrators, etc.

COME WATCH THE OPERATORS CHALLENGE :

Wednesday, April 6, 9:00 am - Dixie Center

OPERATORS CHALLENGE AND YP BARBECUE :

Wednesday, April 6, 6:00 pm - location TBD

Students, Young Professionals and first time Conference attendees breakfast : Thursday, April 7, 7:30 am – Cracker Barrel (across from Dixie Center)

For further information or to RSVP to the above activities, contact: Tiffini Adams / adamst@cvwrf.org / 801-973-9178, ext 103 – office / 801-647-5719 - cell

FRIENDS OF WEAU PRE CONFERENCE ATV RIDE



MONDAY APRIL 4, 2011

4-6 hour ride in scenic Southern Utah

If interested please contact:

Dave Hutchinson

801-541-4949

or

Blair Gubler

435-680-2348



JOIN US FOR A DAY OF FUN IN THE SUN

ANNUAL MOUNTAIN BIKE TOUR OF THE BEARCLAW POPPY TRAIL FRIDAY, APRIL 8, 12:00 PM

If golf is not your game, come join us for a group ride of the Bearclaw Poppy Trail (aka Green Valley Trail). Located just six miles west of St. George, the Bearclaw Poppy Trail covers miles of terrain for the mountain biking enthusiasts. The ride itself is about 2-3 hours and is moderate to high aerobic activity. Please note, the ride is an intermediate to advanced ride and is not recommended for absolute beginners. It can be ridden as an out and back, or a loop. Either way you will get to experience the 'Three Fingers of Death', the 'Three Sisters (aka Acid Drops) and 'Clavicle Hill. Do not let the names scare you off, as there are cheat routes around each one. Enjoy the beautiful desert landscape as you wind down over rolling hills.

Registrants are responsible for their own rental equipment. Helmets are required

For more information, questions or to register please contact Darrel Dixon at Stantec Consulting (darrel.dixon@stantec.com) or fax the registration form to (801) 266-1671. Details regarding meeting location and local bike rental locations attached.

So we can get a count, please send registration forms by April 1, 2011

Follow the directions from the Dixie Center to the ride's starting place. The ride will start at 12:00 PM. Bring enough water for a 2-3 hour ride, plus plenty of sunscreen. Suggestions on rental shops are also attached.

DIRECTIONS

From: Dixie Center 1835 S Convention Center Dr
St George, UT 84790 US
To: 1799 Navajo Dr St George, UT 84790-7734 US

DRIVING DIRECTIONS

1. Start out going NORTHEAST on S CONVENTION CENTER DR toward 1670 SOUTH. (0.58 miles)
2. Turn LEFT onto S BLUFF ST/RIVERSIDE DR. Continue to follow S BLUFF ST. (0.30 miles)
3. Merge onto I-15 S via the ramp on the LEFT toward LAS VEGAS. (1.44 miles)
4. Take EXIT 4 toward BLOOMINGTON. (0.35 miles)
5. Turn RIGHT onto E BRIGHAM RD. (0.01 miles)
6. Turn LEFT onto PIONEER RD. (0.65 miles)
7. Turn RIGHT onto MAN OF WAR RD. (0.79 miles)
8. Turn LEFT onto W BLOOMINGTON DR S. (0.98 miles)
9. Turn LEFT onto UTE RD. (0.27 miles)
10. Turn LEFT onto NAVAJO DR. (0.05 miles)
11. Turn RIGHT to stay on NAVAJO DR. (0.22 miles)
12. End at 1799 Navajo Dr St George, UT 84790-7734 US

Total Estimated Time: 13 minutes

Total Distance: 5.64 miles

RENTAL OPTIONS

1. Bicycles Unlimited

90 South 100 East, St. George, UT 84770

Toll Free: 1-888-673-4492

<http://www.bicyclesunlimited.com/>

2. Red Rock Bicycle

446 W. 100 S. (CORNER OF 100 S.AND BLUFF ST.)

St. George, UT 84770

Phone 435-674-3185 Fax 435-674-7730

<http://www.redrockbicycle.com/>

3. Zion Cycles

868 Zion Park Blvd., P.O. Box 624, Springdale, UT 84767

Phone: (435) 772-0400 Fax: (435) 772-0500

<http://zioncycles.com/>

Name	Contact Phone	Contact Email

ASSUMPTION OF INHERENT RISK IN OUTDOOR ACTIVITIES:

Participants in this activity recognize there are risks integral to the activity. Although it is possible to minimize these risks, they cannot be eliminated without destroying the unique nature of the activity. Participants recognize that this activity occurs in the wilderness in environments that include canyons, mountain and desert terrain, remote from medical facilities, roads and communication sites. These and other risks and hazards can result in injury, damage, permanent disability, death or loss.

By voluntarily signing up to participate in this event, participant agrees that they are responsible and liable for their own wrongful or negligent acts which are committed. Event participants shall defend, indemnify, save and hold harmless WEAU, including its officers and employees, from and against any and all demands, liabilities, claims, damages, actions, and/or proceedings, in law or equity, including reasonable attorney's fees and costs of suit, relating to or arising from the actions or omissions of event participants or their respective employees.

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Walnut Creek, CA 94598
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Fax: (925) 947-6784

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Tel: (602) 275-4303
Fax: (602) 275-4229

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SPORTING CLAYS

COST: \$15

DATE: Tuesday, April 5, 2011

TIME: 4:30pm

LOCATION: Purgatory Clay Sports

DIRECTIONS: From St. George, take I-15 North to Exit #16. Go South on SR-9 to the 2nd set of stoplights. Turn right (South) and follow the Southern Utah Shooting Sports Park signs.



WHAT YOU WILL NEED:

A SHOTGUN: Bring your own or rent one at the club for \$10. The most common is a 12 gauge shotgun but many people shoot with 20 gauge, 28 gauge and even .410's

AMMUNITION: A target or light game load between 7 1/2 - 9 shot. You will need 50 rounds. \$6 a box at the Club.

EAR AND EYE PROTECTION: All people at the range are required to wear ear and eye protection at all times.

HAT: We cannot predict where broken clays will land after they are shot so we recommend a hat to protect your face.

CLOTHES: Wear good shoes or boots that will allow you to walk the course in comfort. We discourage the use of sandals. Comfortable clothes that allow you free movement will work the best.

REGISTRATION FEES AND FORMS ARE DUE BY MARCH 21ST.

Contact Dan Olson (435) 241-0204 or Email WWTP@tooelecitey.org for info. Register one person or a team of five.

Please make checks payable to WEAU or register online at www.wEAU.org.

Name _____

Contact Phone _____

Contact Email _____

Name _____

Contact Phone _____

Contact Email _____

Name _____

Contact Phone _____

Contact Email _____

GOLF TOURNAMENT

FORMAT: Four-person scramble

WHEN: Friday, April 8, 2011 Tee times starting at 11:30 am

WHERE: Sunbrook Golf Course St. George, Utah

GREEN FEES: \$60.00 per person (including cart)

LUNCH: Box lunches and drink provided

CONTACT:

Jeff Beckman
Bowen, Collins & Associates
154 East 14000 South, Draper, UT 84020
(801) 495-2224
jbeckman@bowencollins.com

REGISTRATION FORMS AND FEES ARE DUE BY MARCH 21, 2011

Register online at www.wEAU.org or by returning this registration form to Jeff Beckman (see above) along with a check payable to WEAU Golf Tournament.

Contact Jeff Beckman at (801) 495-2224 for team preference, or we will match single players to fill foursomes. Twelve foursome spots are available on a first-come, first-serve basis.

Name _____

Contact Phone _____

Contact Email _____

Name _____

Contact Phone _____

Contact Email _____

Name _____

Contact Phone _____

Contact Email _____





REGISTRATION FORM

WEAU Members can pay online at www.weau.org or register by filling out this form and sending in a check. To expedite processing, we encourage you to register online. When you register online, you will have the option to pay with credit card or send a check.

Name: _____ Spouse/Guest Name: _____
 Company: _____ Membership Number: _____
 Address: _____ City: _____ State: _____ Zip: _____
 Phone: _____ Fax: _____ E-mail: _____

Late registration cannot guarantee a registration gift

GENERAL CONFERENCE REGISTRATION FEES

	PRE-REGISTER Prior to March 25, 2011	REGISTRATION AFTER March 25, 2011	AMOUNT
Member	\$225.00	\$245.00	
Non-member	\$270.00	\$290.00	
Student	FREE		
Wednesday (one day only)	\$140.00 (member) \$155.00 (non-member)	\$145.00 (member) \$160.00 (non-member)	
Thursday (one day only)	\$140.00 (member) \$155.00 (non-member)	\$145.00 (member) \$160.00 (non-member)	
Pre-Conference: April 5*	\$100.00 (includes lunch)		
Extra Lunch**	\$20		
Banquet Dinner**	\$30		
* See www.weau.org for details ** For guests of conference attendees		TOTAL ENCLOSED:	

PLEASE DO NOT SUBMIT YOUR FORM WITHOUT PAYMENT!
REGISTRATIONS RECEIVED WITHOUT PAYMENT WILL NOT BE PROCESSED (NO P.O.S, NO CREDIT CARDS).

TO REGISTER: Go online or complete form and make checks payable to WEAU and mail to:
 WEAU, 215 South State St., Suite 1000, Salt Lake City, UT 84111

PLEASE DO NOT SEND REGISTRATION AFTER APRIL 1, 2011
AFTER THIS DATE YOU MUST REGISTER ON-SITE OR ONLINE.

View the draft Conference Program at: www.weau.org
 Conference Program will be updated regularly on the website; check back often.

CONFERENCE INFORMATION

When you register for the WEAU Annual Conference, the following is included in your fee:

	Wednesday Opening Luncheon	Thursday Luncheon	Thursday Awards Banquet	Break Refresh- ments
Full Conference	Yes	Yes	Yes	Yes
Student	Yes	Yes	Yes	Yes
Wednesday Only	Yes			Yes
Thursday Only		Yes	Yes	Yes

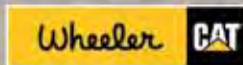
Collection College News



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How will your student be taught?

I use the Ken Kerri, Sacramento State, Operation and Maintenance of Wastewater Collection Systems, Volume 1 and 2.

How long does the course take?

Usually, the course takes 12 to 14 weeks, depending on the vacation plans of the teaching staff. Look on the DEQ website, count back 12 to 14 weeks from the test date, and look for the Collection College notice under WEAU.

What is the cost of the training?

There is NO cost for the training. The student needs to bring a set of the books to use. The books can be past versions, but the newest version is best.

Is this class eligible for CEUs?

Yes, chapter homework sheets need to be turned in to get CEUs.

If I send my student, is there a guarantee he or she will pass the test?

No, the student must spend many hours outside of class studying.

How will I know the student is doing the work?

You will have to ask to see his or her completed math and chapter work sheets.

Where can this free, excellent training be had?

The training takes place at Cottonwood Improvement District, 8620 South Highland Drive, Sandy, UT.

What day and time are the classes usually taught?

The classes are held on Wednesdays at 12:30 pm, unless conflicts arise.

Can students come to only the classes on which they need a brush-up?

Yes, students can come to one or all of the classes. For a complete syllabus, email lonn@utah.gov

Can classes be taken by correspondence?

Yes, correspondence can work, although it is usually better to be in class and participate. [D11](#)

Let's get to the root of the problems.

- The *Sacramento Manuals* recommend cutting roots in a sewer line. What should you do?
 - Start at the downstream manhole and use a root saw to cut up to the upstream manhole.
 - Start at the upstream manhole and use a root saw to cut the roots and trap them at the downstream.
 - Use an impact cutting head to assure base of root is cut, then flush out cuttings.
 - Use a round bar corkscrew on a mechanical rodder.
- You are going to treat a 10" line with Kills-Em-All root killer. The line section is 385' long, the label calls for a dose of 77 PPM. Once the section is bypassed, how many pounds of root treatment are you going to add as you fill the section with liquid?
 - 13.47 lbs
 - 6.42 lbs
 - 1.00 lb
 - 3.55 lbs
- Only cutting roots as a treatment will have what effect?
 - Make them grow back thicker.
 - Shred the root so it will not grow back.
 - Cause the tree to die prematurely.
 - Save money because a longer lasting method may cost more.
- What three things are important when treating roots?
 - Time of day, time of year, type of tree.
 - Type of line, time of year, amount of chemical.
 - Type of tree, time of day, contact time.
 - Amount of chemical, contact time, time of year.
- To find information about the root chemical, what should the operator read?
 - MSDS
 - SCBA
 - CIP Manual
 - ABS guide

Answers 1 - b, 2 - c, 3 - a, 4 - d, 5 - a



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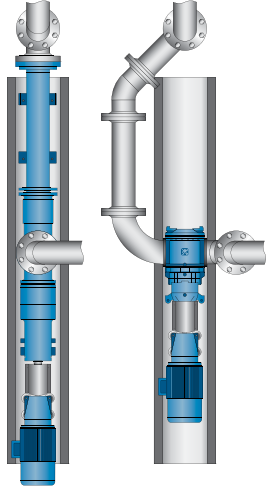
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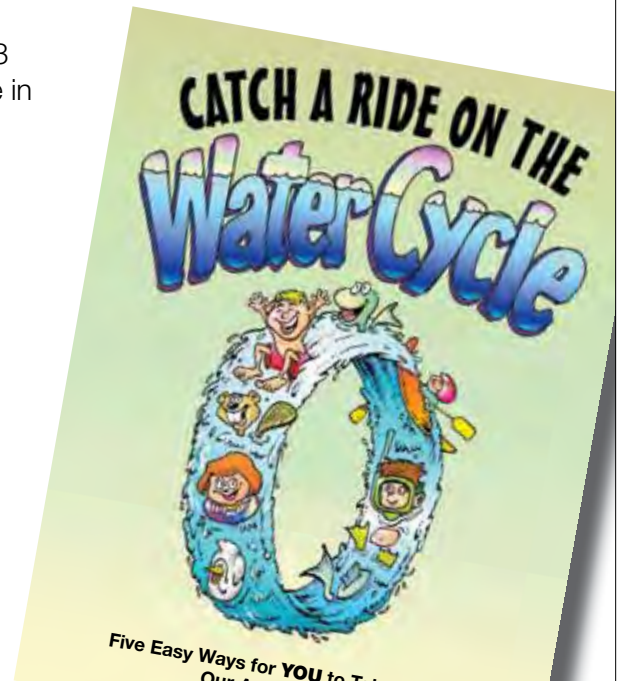
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Even our displays need maintenance

By Marlo Davis

When Snyderville Basin Water Reclamation District (SBWRD) completed their expansion of the East Canyon treatment facility, they had a whole new way of showing people how wastewater is treated. SBWRD had displays made that would explain each step of the wastewater treatment process. As part of these educational displays, SBWRD was able to obtain a permit that would allow them to house live trout in their aquarium. After a trip to the Midway Fish Hatchery, SBWRD is home to 10 Bear Lake cutthroat trout.

Maintaining an aquarium that houses trout brings with it some new challenges. Like any other fish tank, you need to have a bio mass to help keep the fish healthy; with our trout tank we needed more of this bio mass. There are two areas where this is created; both are done with bio balls in the filtering area of the system. This is the overflow from the main tank and also in the bio filter chamber. Also in the filtering area of the tank system is a UV chamber which acts much like the UV disinfection used in our treatment facility.

The last part of the tank system is keeping the fish cool. Trout are a cool water fish and do not like it when the water temperature gets too high. Using a chiller, SBWRD tries to keep the water temperature around 38 degrees Fahrenheit. The chiller is a vital part of the system, so care is given to make sure it does not freeze up while the tank is being cleaned. There are switches located by the tank that control the chiller and the pump located in the basement below the fish tank. These allow the person cleaning the tank to control the flow through the tank without going up and down the stairs.

The operators at East Canyon take great pride in our one of a kind, educational display. [DN](#)

“ SBWRD was able to obtain a permit that would allow them to house live trout in their aquarium. After a trip to the Midway Fish Hatchery, SBWRD is home to 10 Bear Lake cutthroat trout. ”



Blue bio balls in the overflow and in the green filter tank help grow healthy bio mass for the fish.



Laine Mair and Dustin Walton take time to care for the trout at the East Canyon treatment plant.

WWW.WEAU.ORG

refreshed

By Steve Myers



You may have noticed that the WEAU website has recently been updated with a slightly new look. This is a result of many discussions by the Board to try and make this tool more useful to you, the members of this organization. In order to do this, we have added some new features and tried to make existing features more user friendly.

So, go visit the site. Yes, right now. Go to your computer and do it. Do an experiment for me. In the address bar, type in 'weau.org' and press enter. Yes, this is truly an experiment. Some web browsers may not find the page. If this happens, you need to make sure to type in the 'www' as in 'www.weau.org.' This is a slight limitation that we are working on fixing. In the meantime, typing www.weau.org (or simply googling 'weau.org') should get you to the site. Now that you are there, bookmark the page. Save it to your 'Favorites.' Thanks.

Ok, now take a look at the homepage. At the very top of the page is a search bar. I have no idea how to use it. I am kidding, but it

should not need further explanation, other than it works.

Below the main logo are a few tabs. These are there to help you navigate the website (hopefully) with ease. Below the tabs you will find the page body. On the home page, there are three main sections:

1. Latest Announcements
2. Latest Classifieds
3. Latest Training

These sections are dynamic and will always show the newest 2-3 items posted to these respective sections. Hopefully, you find this useful.

You will also notice a sidebar on the left that stays put no matter what page you are on. This sidebar is significant. We have a countdown here. This countdown will focus primarily on upcoming conferences, but may pertain to other important dates, so check

it out regularly. Additionally, other important miscellaneous information is also posted just below the countdown. Finally, all valued (and paying) supporters of our organization will have their logo shown here with a live link to their website.

Finally, at the bottom of the front page, and in a few other places in the site, you will find a contact email. Please use this for questions/comments specifically related to problems with the website. I am at the other end of that email address and am not nearly as knowledgeable as the Board members (whose phone numbers are listed under the 'contact us' page). If you email me with questions not pertaining to the website, there is a good chance it will go ignored. Just say'n...

Now, explore other pages and get familiar. Hopefully, everything should be self-explanatory. We really want this site to be a useful tool to you. Please check in on the site often and take advantage of the opportunities provided. Sign up for training, post a fun wastewater video you made, apply for a job you are unqualified for, sign up to serve on a committee, check the calendar, or download the electronic version of *Digested News*.

We hope you find the new site useful. As always, we are open for recommendations. If you would like to volunteer web design experience to take the site even further, please do not hesitate to contact me or a member of the Board.

We will see you at the next conference. And remember: "There will be snacks. There always are." [DN](#)



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- Rapid solution for increasing process capacity
- Small footprint minimizes civil costs

:: Applications

- Enhanced biological nutrient removal
- Beneficial reuse of wastewater effluent
- Impaired water bodies (TMDL limits)
- Retrofits for existing treatment works
- Water quality conditioning prior to reverse osmosis
- Industrial reuse limiting fresh-water demands



Wastewater Diving

By Cheryl Parisien



At first glance, it would seem like diving and wastewater don't mix.

Quite often, system operators do not consider using divers when it comes time to repair or maintain systems. However, using divers can be a cost-effective alternative to taking the system off-line and draining and pumping. "We dive in clarifiers, aeration basins, repair trash racks, piping – a little bit of everything," says Randy Jacobs, president of Pro-Dive Inc.

Diving in wastewater means working in zero visibility where the work is done by feel. Therefore, the diver must understand the chemistry of wastewater and the mechanics of treatment. Divers can also face thermal issues in wastewater, especially in industrial settings, says Jacobs. "The water can be quite hot, so the diver can get very fatigued unless you take steps to keep him cool."

Aside from system maintenance and repair, zebra mussel control is another application for divers, although zebra mussels are not as large a concern as they were a decade ago. "Most water intakes in Lake Michigan have installed chemical feed systems to control zebra mussel infestations, but we do annual maintenance," says Jacobs. His company also removes dispersing rings in the fall, and reinstalls them in the spring.

Divers complete inspections using a variety of techniques, including underwater photography and video documentation, tactile and visual inspections, and destructive and non-destructive testing.

In recent years, Pro-Dive has incorporated some high-tech options like robots, or ROVs, which can be inserted in pipelines to inspect interiors. "Hydrographic surveying and sonar systems have come a long way, and they aid in locating structures and assessing the conditions remotely," says

Jacobs. "Often, utilities don't yet know what the problem is, so it is helpful to put a diver in and he can diagnose the problem, usually in short order, and he can sometimes come up with a repair."

Potable water applications

Professional divers also work in potable water, cleaning tanks, maintaining infrastructure, and the like.

Certified commercial divers can inspect water storage tanks, towers and clearwells without draining them or taking them out of service. The diver is encapsulated (no part of the divers body touches the water) in a sealed drysuit and then washed down with a 200ppm chlorine solution before entering the tank. All diving dress is used exclusively in drinking water, to avoid contamination, in compliance with American Water Works Association (AWWA) standards. The diver is then able to move about the tank to perform inspections or

“Often, utilities don’t yet know what the problem is, so it is helpful to put a diver in and he can diagnose the problem, usually in short order, and he can sometimes come up with a repair.”



Photos courtesy Pro-Dive Inc.

clean. Using a specially equipped pump or airlift system the diver is able to remove the sediment from the tank floor. Everything that is loose is removed without damage to painted surfaces. This allows the chlorine in the system to work effectively.

This process is an effective way to clean and inspect potable water storage tanks because all of the maintenance can be done while the tank remains in service and full of water and most of the interior surfaces of the tank can be easily accessed.

“It’s a different technique than in wastewater, because in wastewater you have to isolate the diver from the contaminants in a sealed suit, and in potable water the diver is treated as a contaminant where he has to be isolated and all the equipment disinfected before entering the water,” says Jacobs.

There are many benefits to using commercial divers in the water industry, and wastewater is no exception. It seems they do mix, after all. [DN](#)

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OPS Challenge

As usual, this year is going to be exciting as the OPS Challenge teams are preparing for battle in St. George. A lot of work is put in for this event to be successful and we really appreciate everyone's help. This year, we have seven

teams going down south to demonstrate who can best execute what they have practiced. It takes some calm nerves to deliberately push yourselves without being so fast that you are penalized for forgetting something. It is stressful when you are

taking a process test with 90-plus questions and you have to show your work, complete it in 15 to 25 minutes, and still be expected to score high. You have to make sure your meniscus is proper on your pipette technique or we give you another penalty. Do not forget to rescue a fallen co-worker and follow all safety procedures, along with correct CPR techniques. Plus, you will have to repair that pipe and pump ASAP without any leaks or flaws.

So, GOOOOOOOD luck, and do not forget to practice hard. We will be cheering on all of you.

This year's teams are:

Team 1 – Snyderville:

Marlo Davis, Nick Brown, Dakody Gines, Dustin Lewis, Cody Snyder

Team 2 – Central Valley:

Hadley Gunn, Tiffini Adams, Kevin Gallagher, Darin Morris, Jeff Weiss

Team 3 – Cottonwood:

Mark Leonard, Jeff Terry, John Lewis, James Herrera, Kert Spor

Team 4 – North Davis Gold Flush:

Brian Lamar, Ron Clements, Gordon Call, Kylee Nelson

Team 5 – Central Weber:

Jeff Porter, Tyler Barfuss, Shawn Wilson, Matt Burlison, Brett Nelson

Team 6 – North Davis Royal Flush:

Tom Anderson, Bryce Southworth, Lane Reynolds, Jose Zamora

Team 7 – Combined team of South Valley and Provo:

Provo - Jordon Boone, Weston Youd
South Valley - Sherry Sheffield, Weston Gardner

This is a great lineup and we cannot wait to see everyone down there.

We have also been arranging for judges and really appreciate everyone who has already agreed to help us out. It takes a great number of people to pull this off. If you are interested in helping us judge, please contact us because we always need help.

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Gary Hill (435) 731-0808

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Operations Quiz

1. When using an evaporator in disinfection, the chlorine-pressure-reducing valve should be located where?

- a) inside the evaporator
- b) upstream of the evaporator
- c) downstream of the evaporator
- d) next to the evaporator

2. Most gas piping systems are rated what for service?

- a) 200 psi
- b) 100 psi
- c) 150 psi
- d) 50 psi

3. The concentration of your polymer is 0.8%. If the feed rate of your polymer is 3 gpm, what is the feed rate of the polymer in lb/d?

- a) 288 lb/d
- b) 386 lb/d
- c) 613 lb/d
- d) 467 lb/d

4. Steps used to control filter flies on your trickling filter include increased hydraulic loading, cleaning spray nozzles, occasionally flooding the filter, and what?

- a) draining the filter for an extended period of time
- b) chlorinating the filter
- c) changing to a new type of media
- d) fumigating the filter and area with pesticides

5. A control system that uses information about the inputs to a process in order to prevent process errors is known as what kind of controller?

- a) feedback
- b) manual
- c) compound
- d) feed forward

6. An aerated grit chamber must maintain what constant velocity for proper operation?

- a) 1 ft/sec
- b) 2 ft/sec
- c) 4 ft/sec
- d) 3 ft/sec

7. Which of the following conditioning chemicals adds the most mass to the solids to be disposed of?

- a) liquid polymer
- b) emulsion polymer
- c) dry polymer
- d) lime and ferric chloride

8. The recommended oil change frequency for gear reducers operating under favorable conditions and using petroleum-based lubricants is what?

- a) 2 weeks or 200 hours of operation, whichever comes first
- b) 2 years or 10,000 hours of operation, whichever comes first
- c) 1 month or 450 hours of operation, whichever comes first
- d) 6 months or 2500 hours of operation, whichever comes

9. What is the range of the maximum weir loadings for secondary clarifiers?

- a) 6,400-9,600 gpd/ft
- b) 4,000-6,000 gpd/ft
- c) 10,000-20,000 gpd/ft
- d) 24,000-40,000 gpd/ft

10. pH is the measure of the activity of what?

Answers:

1. c
2. c
3. a
4. b
5. a
6. c
7. d
8. a
9. c
10. hydrogen ions

To reach Utah's water industry professionals through the *Digested News* magazine and its targeted readership, contact Chad at your earliest convenience to discuss your company's promotional plans for 2011.

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Dear wastewater professionals,

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The class will be limited to 25 individuals, so please call and mail applications ASAP to Chris Reilley (contact info listed below). Lunch will be provided.

Dates: Wednesday, April 13, 2011 and Thursday, April 14, 2011

Training title: Exam Review Treatment III & IV

CEU's offered: 1.2

Instructor(s): Paul Krauth

Registration: 8:30 – 9:00 am

Class Instruction: 9:00 am – 4:30 pm

Course Outline: Day 1 – Liquid Processes
Day 2 – Solids Process, Laboratory Issues

Location: Department of Environmental
Quality Great Salt Lake Room (3rd Floor)
195 North 1950 West Salt Lake City, Utah 84114

Cost for the training: (material costs)
WEAU members – \$100

Non-members – \$120

Registration deadline: April 11, 2011

If you have any questions, call Chris Reilley at (801) 973-9178 ext.218 or (801) 201-8669

Detach bottom portion and mail with payment

Exam review April 13-14, 2011

(please print clearly)

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(if no number, please pay the non-member price)

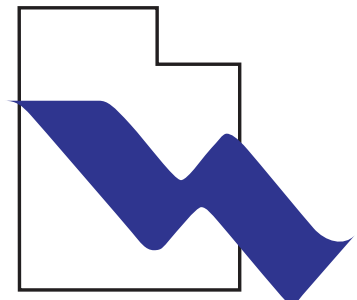
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Phone no. _____

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Chris Reilley
Central Valley Water Reclamation Facility
800 West Central Valley Road
Salt Lake City, Utah 84119





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The future

By Chris Reilley



In the past two weeks, I had the opportunity to meet with a number of students and explain what I do for a living and what a wastewater treatment plant is all about. I was quite shocked at the response that I had from these young people. The first was my own daughter, who is in the 7th grade and was doing a paper for school. I gave her a plant tour where she met with several other people who explained the things they do to help improve the water and our environment. She then asked if I would give a similar presentation to her class. I talked to the students about the *Clean Water Act*, the effect that wastewater has had on the environment in the past, and how so many people are now involved. We discussed how water borne diseases have been some of the most difficult things to prevent. I informed them that the *British Journal of Medicine* was cited as saying that “the advances in sanitation are the single greatest factor in extending human life in

the last 150 years.” We discussed that the United States has taken this job of cleaning our water very seriously and that it is very important for us all to understand the situation.

We discussed many things and, when I asked if they had any questions, I was astonished as to how many were asked. I spent as much time answering their questions as I did talking about what I did for a living. They asked about what kind of science is needed, whether math is used in our industry, and what kind of education is needed. It was good to see the students understand that our environment needs people to help keep it clean and that this field of endeavor is truly important.

So, why talk about students? Because they are our future, and we need to help educate the next generation. They were interested to know how important the water cycle is and where our clean water comes from. We should do our best to capitalize on the education of those who

will take the helm in the future. Now, I am not suggesting we all jump ship and leave things up to the next generation, but, like planning and designing a city and its infrastructure, we need to help plan and prepare for the future. Take time to talk to the people around you and let them know that we care about the communities and environment in which we live.

Our annual conference is coming quickly and I hope that many of you are able to attend. The Operations Challenge is gearing up for St. George and the competition is going to be great, as usual. We did invite teams to come from Nevada, but it looks as though it probably will not happen until next year. If you are unable to make it to the annual conference, maybe we will see you at one of the next training sessions set up by our Technical Committee. We do have a Grade III and IV exam review coming up in the middle of April (the week prior to the actual exam), so maybe we will see some of you there. We also have the PWO golf tournament that I believe is scheduled in June.

WOW, it sounds like spring is on its way and, before we know it, it will be here. With this change in seasons, there will also be a change in the guard. Gary Hill will be our next PWO representative and I have complete confidence that he will do a fantastic job.

It has been a great year. I have enjoyed meeting many of you and I personally appreciate your associations. I have benefited from getting to know what great people you are and the passion that many of you have for a creating a good life for yourselves and your loved ones.

May the future be bright for all of you and for those with whom you associate. I think the future looks great, if we continue to do our part in helping to provide and maintain clean water to our environment and the people we serve. Good luck and thanks for everything you do. [DN](#)

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Maintenance Quiz (piping)



1. You are connecting a 2" copper line to a 2" galvanized system. What would most likely be used to help prevent electrolysis?

- a) Support bracket
- b) Pipe insulation
- c) Dielectric union
- d) Copper only union

2. Which of the following best fits? What changes on a 1" PVC pipe from sch. 40 to sch. 80?

- a) Sch. 40 is in 20 ft. lengths and sch. 80 only comes in 10 ft. lengths
- b) Cannot ever use the same glue
- c) Outside diameter stays the same
- d) Inside diameter stays the same

3. What product is placed in a line to account for line growth and retraction that may occur due to heat or the lack of heat?

- a) Flange
- b) Groove
- c) Pressure gauge
- d) Expansion joint

4. What fitting might best be used to go from 4" piping to 3" piping? (NPT)

- a) Threaded coupling
- b) Bell reducer
- c) Hose clamp
- d) 3" to 4" PVC slip to thread adapter

5. You have a pipe running on the ground and it needs to be reduced down to a smaller pipe. The smaller pipe needs to run along the ground, i.e., not to stay in the center, but offset. Which adapter would you use?

- a) Eccentric reducer
- b) Straight reducer
- c) Concentric reducer
- d) Lateral strainer

Answers:

1.C 2.C 3.D 4.B 5.A

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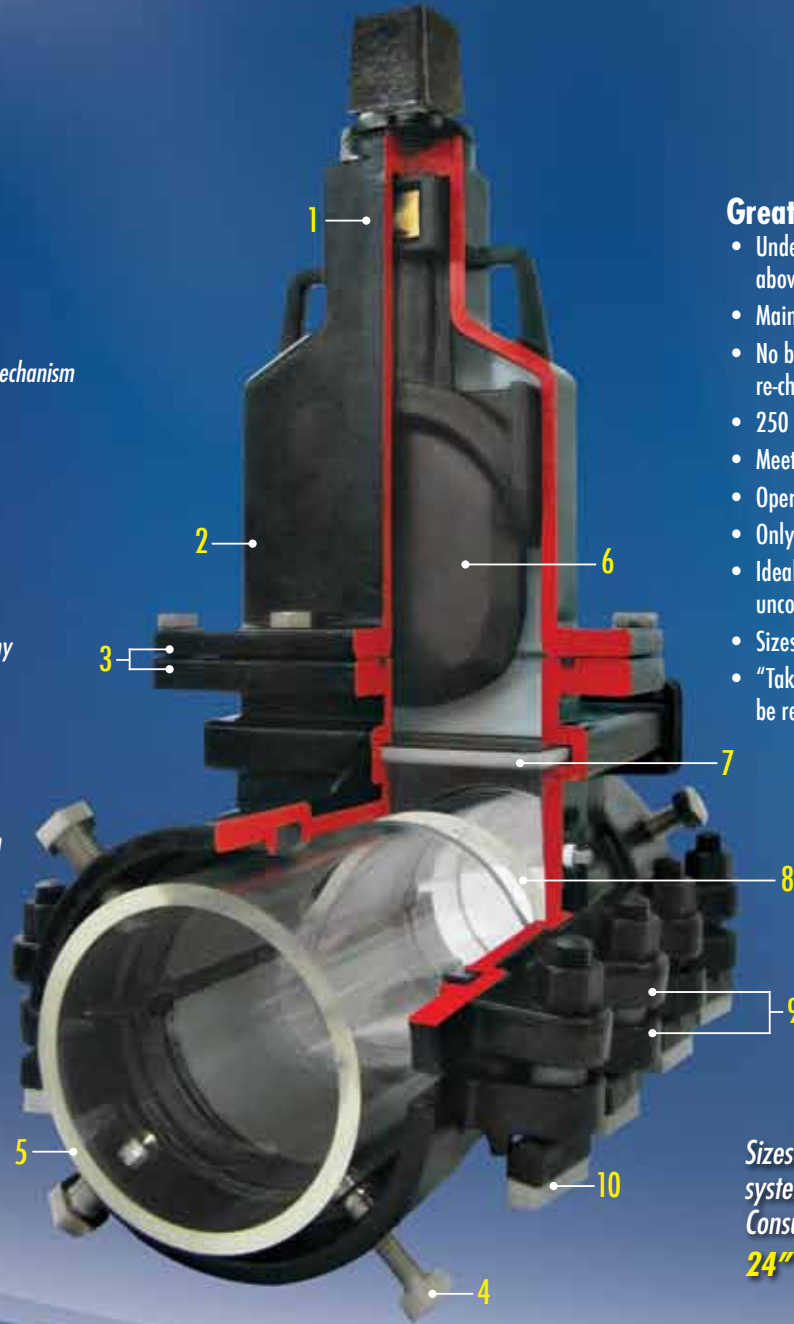


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Automatic Water Sampling

Lou Dinato, Can-Am Instruments Ltd.

Water sampling is probably not one of the main topics discussed at the dinner table each evening, but who would have thought that almost every object at the dinner table, including the table in most cases, was produced or supplied by manufacturers that have their process effluent sampled using water samplers. As simple as it sounds, collecting a water or wastewater sample may be trickier than you think.

Selecting a water sampler may be easy if you only had one option, but, in today's market, we are given many choices. It is usually best to speak to a professional who can review your application, assist with installation and provide training.

What is water sampling?

Water sampling is collecting a representative water or wastewater sample

from the location to be monitored, and having it analyzed for predetermined contaminants. *STANDARD METHODS* (20th Edition, Section 1060 § B, Collection and Sampling) states that "A sample can represent only the composition of its source at the time and place of collection." Water/wastewater sampling is the first and most important step in determining the quality of an effluent and the effect on the target body of water. Laboratory analysis will determine the concentration and/or presence of specific substances in the water, such as TSS (total suspended solids), TP (total Phosphorus), BOD (biochemical oxygen demand), VOC's (volatile organic compounds), etc. High quality results can only be achieved when the sample is representative of the site of interest. These results can be used to assess and determine specific loading and cross referenced to local, provincial

and federal water quality limits. Typically, samples are collected from municipal and industrial sources along with creeks, rivers, streams and lakes in order to determine if a water quality issue exists. Samples are also collected at different stages of the treatment process within a water/wastewater treatment facility to ensure that the treatment system is running efficiently.

Why we need to collect water samples

Water samples are collected to ensure that we are not affecting and contaminating the environment and general population with pollutants discharged into our waterways. Water sampling can also be used to assess the loading at municipal treatment facilities to see if it is necessary to have pretreatment at pollutant sources. Sample collection and analysis has become a regulatory requirement in most areas and, in others, gives us a better understanding of the impact we have on our bodies of water. Some of the people collecting water samples may be consulting engineers; municipal, provincial and federal regulatory bodies; treatment plant operators; laboratories; facility operators; and sampling service providers. Wherever the water/wastewater sample is collected, local bylaws and regulations apply to make sure that allowable limits of specific parameters are not exceeded. Not monitoring and reporting your effluent quality may result in penalties from local, provincial or federal agencies.



Automatic sampler with eight sample bottles



Sampler intake teflon tubing, strainer pointing downstream



Automatic sampler

Types of samplers

Samplers come in many different shapes and sizes with add-on features allowing the end user to collect the exact sample needed. The most common water sampler is one which uses a peristaltic pump to deliver a water sample to an internal sample container. These samplers come in portable, refrigerated and all-weather models. One of my favorites is the Hach SD900 group of sampler because of its ease of use. Other technologies used for water sampling may have a mechanical gathering system known as the dipper sampler. The dipper sampler simply scoops a water sample from the sampling source and conveys it to a sample container. We also see vacuum systems that have no moving parts at the sample collection end of things, but simply use a container under a vacuum to obtain a sample. Most samplers can be configured with 1-24 internal sample containers. Samples can be collected on a time or flow proportional basis. The more options the better. You may also need to monitor flow or a specific water quality parameter, and samplers can have all these options along with alarm reporting and data download capabilities directly through the instrument's internal modem or cellular device.

Selecting the appropriate materials like polyethylene, glass, stainless steel, teflon, etc. for the wetted parts of the sampler, such as the intake tubing, the sample delivery system, and the collection bottles, should be taken into consideration. Chemical resistance charts are a good reference. Under Municipal Industrial Strategy for Abatement (MISA) guidelines, the material in the sampling train is mandated for type and length of tubing/wetted parts.

Sampling techniques

Water/wastewater sampling is generally performed by one of two methods, grab sampling or composite sampling. Grab sampling is just what it sounds like; all of the test material is collected at one time. As such, a grab sample reflects performance only at the point in time that the sample was collected, and then, only if the sample was properly collected. Composite sampling consists of a collection of numerous individual discrete samples taken at regular intervals over a period of time, usually 24 hours. The material being sampled is collected in a common container over the sampling period. Therefore, the analysis of this material will represent the average performance during the collection period.

Composite samples of wastewater plant effluent collected, stored, analyzed, tabulated and averaged over an extended period of time provide the only verifiable indication of treatment plant performance. Collecting and analyzing these composite samples is often an expensive and time-consuming process. For these reasons, most regulatory organizations recognize independent third-party certifiers, who use composite sampling methods to conduct performance evaluation and accurately measure system performance in a standardized, reproducible setting. Attempting to evaluate a residential treatment system in the field by analyzing a grab sample taken from a sump or any other containment vessel provides a compound degree of error and can yield erroneous conclusions about system performance.

Other sampling methods could be employed: discrete sampling, where the sample is collected in 2, 4, 8 or 24 bottles over a period of time, usually 24 hours, at

regular or irregular time intervals; flow-based or time-based sampling; setpoint sampling for individual parameters; or stormwater sampling.

How to select a sampling system

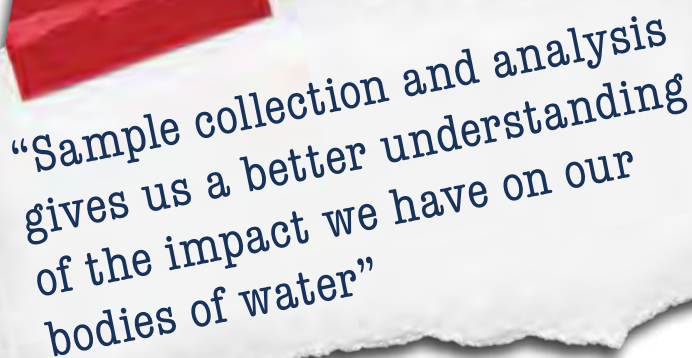
When selecting a water sampler, you must consider the liquid to be monitored along with any specific site, regulatory and reporting requirements. You may also want to consider your future needs and choose a sampler that allows for the addition of options without the need to purchase a new system. Most importantly, select a system from a supplier that can support you and address your needs quickly and effectively. You are best at knowing what your application is and how it works. Digital pictures work great and can be a useful tool to send to a sampler supplier. This can give the supplier a feel of the site and quickly narrow the selection process to what you need. It is also important to know the cost of ownership of the sampler. Typically, samplers come with warranties that cover major failures. You even have the option through most suppliers to test drive a unit before you purchase for a week or two.

Installing sampling equipment

It is very important to select the correct sampling location, as the sample collected will be representative of the site. I recommend installing the sampler as close as possible to the sampling source to avoid any strain and wear on the sampler's pumping/suction system. The sampler should be accessible to users for programming and sample collection. The intake line should always be placed in an area of the sample source that is well mixed and representative of the location.

If you are not in the market to purchase a water sampler, you can rent a unit or even have your water sampling performed for you by a sampling provider. Depending on the length of your sampling program, the equipment will need to be maintained to ensure it is operating properly. This can easily be done when the sample is collected and prepped for analysis.

Water sampling has become an important tool in keeping our waterways healthy, and samplers are allowing us to capture more accurate representative samples for monitoring and compliance purposes. [DN](#)



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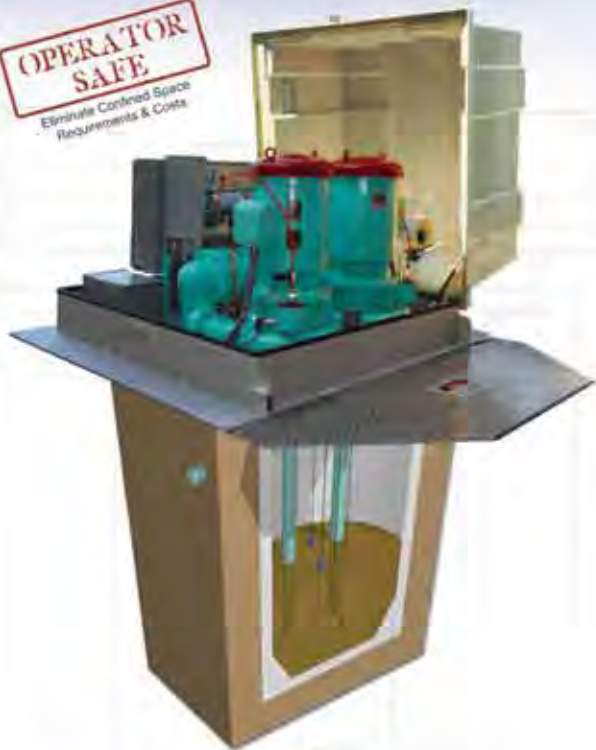
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WEF, AWWA to Hold First Joint Fly-In



“Staff members from both organizations will be helping AWWA and WEF leadership within each state communicate with one another to help make sure this happens.”

For 2011, the annual Water Matters! Fly-In will have a new twist to make it a bigger, more wide-ranging event in the scope of issues brought to decision-makers in Washington. For the first time, AWWA and the Water Environment Federation (WEF) will conduct a joint Fly-In.

Tommy Holmes, AWWA legislative director, said, “There are a number of issues the drinking water and clean water communities can take to Congress together: infrastructure investment, security, water research and more. There will be a lot of new faces in Congress and the Fly-In is our best opportunity to educate these newly elected leaders on water issues.”

The 2011 will be April 4-5, a Monday-Tuesday affair instead of the usual Wednesday-Thursday format. As usual, the Fly-In will kick off with issue briefings and discussions on the first morning, and then delegates will be off to Capitol Hill to visit their own members of Congress. A reception on the “Hill” that first night,

followed by more visits to the Hill on Tuesday morning. The event will conclude with debriefings and discussions of lessons learned.

Discussions of a joint Fly-In began between AWWA and WEF leadership last spring. Notices about the agreed-upon joint Fly-In were sent to AWWA Section leadership and to WEF leadership in October, asking them to start discussing who their delegates will be. In many AWWA Sections, there is a lot of crossover membership among AWWA and WEF, making the task of coordination at the state or Section level simpler.

“One thing we always stress at Fly-Ins is the necessity of participants from within each state coordinating their visits,” said Holmes. “Staff members from both organizations will be helping AWWA and WEF leadership within each state communicate with one another to help make sure this happens.”

In regard to registration of AWWA delegates, Section chairs in coordination

with Section water utility council or government affairs committee chairs are to select a state’s delegates. A registration form was sent to Section leadership in October, and Sections were asked to use that to send it their delegates to the Washington office of AWWA.

The deadline for naming delegates is February 17. Delegates who try to register after that time will likely have difficulty booking rooms at the headquarters hotel because spring is the time when a lot of organizations hold meetings of Fly-In-type events in Washington.

The headquarters hotel will be the Marriott Metro Center in downtown Washington, D.C. The Washington office will send out information on how to secure housing to registered delegates in early 2011.

Contact person for more information is Tommy Holmes in the Washington office at tholmes@awwa.org or 202-326-6128. [DW](#)

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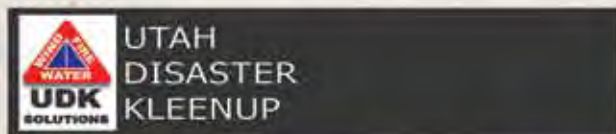
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