

REGISTRATION PROGRAM

PennTec 
2016 88th Annual Technical
Conference & Exhibition

June 5-8, 2016

**Penn Stater Conference Center Hotel
State College, PA**

Follow PWEA   

CONFERENCE AT A GLANCE

(as of February 1, 2016)

Visit www.pwea.org for the most current program schedule.

Sunday, June 5

8:30am-3:00pm Golf Tournament
3:00-5:00pm Registration Open

Monday, June 6

7:00-5:30pm Registration Open
7:30-9:00am Continental Breakfast
9:00am-4:30pm Students & Young Professionals (SYP) Lounge
9:00-11:45am Morning Technical Programs
Collection Systems
Engineering
Professional Wastewater Operations
Stormwater
Utility Management
Workshops
Activated Sludge Refresher Course (Day 1)
Overview of Portable Pumps and Generators
Industrial Pretreatment Laboratory Data
Fecal Forum II
11:45am-1:00pm Exhibit Hall Open
Complimentary Lunch
12:30-1:00pm Annual Business Meeting with
Dessert & Coffee
1:00-3:30pm PWO Plant Tour
1:00-4:30pm Afternoon Technical Programs
Collection Systems
Engineering
Stormwater
Utility Management
2:30-3:30pm Exhibit Hall Open
Break Refreshments
4:30-5:30pm Exhibit Hall Open
President's Reception
6:00-9:00pm PWEA Awards Ceremony and Annual Dinner

Tuesday, June 7

7:00-8:30am Continental Breakfast in Exhibit Hall
7:00am-5:30pm Registration Open
8:00am-4:30pm SYP Lounge
8:00-11:30am Morning Technical Programs
Biosolids
Collection Systems
Engineering
Water Sustainability & Reuse
8:00-11:30am Student Research Presentations
Workshops
NFPA 70E Electrical Safety in the Workplace
Laboratory Supervisor Training
Introduction to Wastewater Treatment
Activated Sludge Refresher Course (Day 2)
Three Hour Energy - The Math Behind the Savings
9:00-11:00am Stormwater Bus Tour
9:30-10:30am Exhibit Hall Open
Break Refreshments
11:30am-1:00pm Exhibit Hall Open
Complimentary Lunch
Student Research Posters
12:30-1:30pm Career Fair in SYP Lounge
1:00-4:30pm Afternoon Technical Programs
Biosolids
Collection Systems
Industrial Pretreatment
Professional Wastewater Operations
2:30-3:30pm Exhibit Hall Open
Break Refreshments
4:30-5:30pm Exhibit Hall Open
Beer & Pretzels Reception
Operator Olympics
6:00-9:00pm Social Event - "Are You Smarter Than a Young Professional?" Trivia Challenge

Wednesday, June 8

7:00-8:30am Continental Breakfast
7:00am-12:00pm Registration Open
8:00-11:00am Morning Technical Programs
Construction
Finance
Workshops
Fats, Oils & Grease (FOG)
Responsibilities of Clean Water Professionals
8:00-11:30am Break Refreshments
8:00am-12:00pm Break Refreshments
9:30-10:00am Conference Concludes
11:30am



NEW MAILING ADDRESS

All event registrations should now be mailed to the following address:

PWEA Registration
PO Box 61
Blossburg, PA 16912

General correspondence and membership payments will still go to the Gettysburg address.

Be sure to notify your accounting department of this change. Thank you.

A Message from the PWEA President and the Conference Committee Chair

On behalf of the PWEA Board of Directors and the 2016 Conference Committee, we invite you to attend PWEA's 88th Annual Technical Conference and Exhibition (PennTec 2016) on June 5-8 at the Penn Stater Conference Center Hotel in State College, PA.

This year's Conference Program includes a wide range of topics related to water quality. In addition to the Conference technical sessions, we are also presenting workshops which have been approved by the PA DEP for additional contact hours for water and/or wastewater operator licenses. By attending these workshops, you could earn **up to 19.5 DEP contact hours, or up to 23 Professional Development Hours**, in just a few days!

A very important part of the Conference is the vendor exhibition. By visiting the exhibits, you will gain insight into new and innovative solutions and discover new products and equipment that will help you do your job in a more efficient and safer manner. We encourage you to talk to the vendors about what is most important to you.

The Conference includes networking opportunities for you to meet and interact with your colleagues. The President's Reception will be in the Exhibit Hall on Monday evening. The Annual PWEA Dinner and Awards Ceremony will be held on Monday night. The Beer & Pretzels Reception and the "Are You Smarter Than a Young Professional" Trivia Challenge are on Tuesday.

We believe the PennTec Conference will provide everything you need under one roof—education, vendor contacts, and networking. We look forward to seeing you there!



Larry Fair
Chair, PennTec 2016
Conference Committee



Brian Book
PWEA President

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PWEA Annual Business Meeting

PWEA members and non-members are invited to attend and participate in the Annual Business Meeting. The Board of Directors welcomes input from everyone. Not a member? Join online, print a membership application from the PWEA web site, www.pwea.org, or pick one up at the registration desk on-site.



Coffee and dessert will be available during the Annual Business Meeting.

GENERAL INFORMATION

Conference Registration

You may register for the full Conference or at the daily rate. **See the chart on page 5 for a list of what is included with your registration fee.** Access to the Exhibit Hall is included for the day(s) covered by your registration. You must be a member of PWEA or WEF/PWEA to qualify for Member rates. Go to page 19 for the registration form.

Registration Confirmation

Confirmations will be sent by email. Please be sure to include your email address on your registration form.

Online Registration

To register online, go to www.pwea.org, click Event Registration under the Calendar tab, then click the Register link to go to our secure website.

Guest Registration

One guest may register at no charge with each FULL Conference registration. Daily and discounted registrations do not qualify for complimentary guest registration. A guest is a spouse, life partner or dependent who is not in the water or wastewater industry and who will not attend any educational sessions. The Annual Dinner and other ticketed events are not included. Ticket(s) must be purchased if a guest wishes to attend those events.

College Students

Full-time college students may register at no charge if the registration form is submitted with a photocopy of current student identification. Social events and ticketed events are not included.

Cancellation/Substitution Policy

No refunds granted after April 30th. A \$50 cancellation fee will be assessed on all refund requests received by April 30th. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 15th and must be made in writing, accompanied by a new registration form. Substitutions may not be made on-site.

Badges

Upon arrival at the Conference, visit the PWEA Registration Desk to pick up your badge and other Conference materials. Everyone must have a badge to enter the Exhibit Hall, conference sessions, and food areas. Badges will be checked, so please wear your badge in a visible area at all times

Wireless Internet Service

Wireless internet service will be available at no charge in the Exhibit Hall.

CERTIFICATION

PA DEP Operator Certification

The PA Department of Environmental Protection (PA DEP) has approved permanent continuing education status for the PWEA Annual Conference. The Conference is being planned in accordance to the requirements of House Bill 183 (Act 11) and application has been approved to provide five (5) contact hours to eligible wastewater operators. The PWEA is a PA DEP accredited sponsor and is permitted to issue continuing education credits to water and wastewater operators.

To ensure you meet continuing education requirements, please refer to the Operator Certification 3-Year Renewal Cycle Schedule. **IMPORTANT: Contact hours received outside of your renewal cycle will not count toward your requirements.**

To comply with accreditation sponsor requirements, the PWEA will require every attendee to check in and out of each half day timeslot by presenting the contact hour tracking sheet for stamping.

Contact hour tracking sheets will be available at the Registration Area. Review this form very carefully so you are aware of all requirements. You must attend at least 2.5 hours in each half day in order to qualify for contact hours. Each half day session is worth 1.0 contact hour. Use the same contact hour tracking sheet for all Conference sessions.

Completed sheets must be turned in to the PWEA registration staff during posted registration hours. You must provide a photo ID when turning in your tracking sheet.

PWEA requires that a copy of your PA DEP Client ID Card or License be included with your registration so that your information and contact hours can be accurately reported to the PA DEP. Certificates will be processed and emailed approximately one month after the Annual Conference.

In addition to the Conference contact hours, ten workshops have been approved by the PA DEP for additional credit. Go to pages 16-17 for more information. These workshops will run concurrently with the Conference and may have extended hours. You will receive credit for either the workshop or the Conference session, depending on what you attend during each timeslot.

Please note: You may only receive credit for attending a specific workshop once during your renewal cycle. DEP will not count the same workshop more than once within a cycle. Please check your records to be sure you have not previously attended one of these workshops within your current cycle.

Continuing Education for Professional Engineers

PWEA technical sessions are not pre-approved by the State Registration Board. Therefore, it is not possible to guarantee their acceptance for certification purposes. PWEA will issue an attendance certificate provided you submit a tracking sheet which will be available at the Registration Area. PE's, LS's and Geologists earn 3 Professional Development Hours (PDH) per half day session.

Other Certification

At this time, the PWEA cannot provide continuing education certification for anyone other than PA DEP water and wastewater operators. However, Certificates of Attendance can be prepared and mailed upon request. It is your responsibility to check with your certification board to determine whether this type of certificate is acceptable.

HOTEL ACCOMMODATIONS

Penn Stater Conference Center Hotel 215 Innovation Blvd • State College, PA 16803

A block of rooms has been reserved at the Penn Stater for PennTec 2016. Reservations must be made by May 5, 2016. Rooms may not be available after this date. The discounted room rate is as follows:

\$129.00 per Room/Single or \$139 per Room/Double Occupancy

This rate includes overnight accommodations only. All rooms are non-smoking.

Please call Reservations at 1-800-233-7505 and mention Reservation ID PAWF16A to receive the discounted rate.



WHAT'S INCLUDED IN YOUR CONFERENCE REGISTRATION?

	Regular Conference Sessions	Monday Exhibit Hall; Continental Breakfast; Breaks; Lunch; President's Reception	Monday Plant Tour	Monday Annual Dinner	Tuesday Exhibit Hall; Continental Breakfast; Breaks; Lunch; Reception	Tuesday Stormwater Tour	Tuesday YP Social Event	Wednesday Continental Breakfast; Break	Workshops
Full Conference	Yes	Yes	No	Discounted	Yes	No	No	Yes	No
Monday only	Yes	Yes	No	No	No	No	No	No	No
Monday only, YPs	Yes	Yes	Yes	No	No	No	No	No	No
Tuesday only	Yes	No	No	No	Yes	No	No	No	No
Tuesday only, YPs	Yes	No	No	No	Yes	Yes or	Yes	No	No
Wednesday only	Yes	No	No	No	No	No	No	Yes	No
Guest Registration	No	Yes	No	No	No	No	No	Yes	No

Early Registration Discount

Register by March 31st and save \$50 on your Conference registration fee.
In order to qualify, payment must be postmarked by March 31st.
(Discounted fees are noted on registration form.)

TOURS AND SPECIAL EVENTS



Annual PWEA Golf Tournament

Sunday, 8:30am

Join your colleagues for a friendly game of golf! The tournament will be held at the PSU White Golf Course, about 5 minutes from the hotel. Refreshments and prizes will be provided. Net proceeds from the golf tournament will benefit PWEA's Operations Challenge Program.

To qualify for the special foursome rate, all four names must be included on one registration form and accompanied by full payment. You may not register at the foursome rate using individual registration forms.

Cost is \$90 per person (or \$340 per foursome), and includes greens fee, golf cart, lunch and refreshments. Pre-registration is required. You must register by May 15th; on-site registration is not available for this event. Appropriate golf attire is required.



PWO Plant Tour Easterly Wastewater Treatment Facility Altoona Water Authority, Blair County, PA Monday, 1:00-3:30pm

**This tour is sponsored by
Gwin, Dobson & Foreman Consulting Engineers.**

The plant is one of the state's largest and most complex BNR wastewater projects. The \$35 million BNR Upgrade and Expansion project employs a unique step-feed process for treatment of wet weather CSO flows while preserving BNR bio-mass. The plant operates under the following criteria: Capacity: 9.0 MGD (ADF); 16.0 MGD (Max. Month); 35 MGD (Peak) Annual Average Concentrations – 5.3 mg/l (TN) and 0.71 mg/l (TP)

This tour should be of particular benefit to those interested in handling high wet weather and combined sewer flow in a nutrient removal process.

Be sure to register in advance in order to reserve your seat on the bus. A limited number of tickets may be available on-site. The cost is \$10 per person. Bus will begin boarding at 12:30pm and will depart at 12:45pm.



PennState

Stormwater Bus Tour Penn State University Park's Green Infrastructure/Stormwater Management Facilities

Tuesday, 9:00-11:00am

Stormwater management has come to the forefront as an extremely important and timely topic of interest. Larry Fennessey, Penn State's Stormwater Engineer, continually works to improve the sustainability of Penn State's stormwater and wastewater management, as well as its protection of potable source water.

Larry will lead a 1.5 hour tour of green infrastructure and stormwater management facilities on the University Park campus; will discuss topics such as their design, construction, and performance; and will provide an overview of Penn State's stormwater program.

Be sure to register in advance in order to reserve your seat on the bus. A limited number of tickets may be available on-site. The cost is \$20 per person. Bus will begin boarding at 8:45am and will depart at 9:00am.



Operator Olympics Tuesday, 4:30pm

This is a fun activity based on some real Olympic events, but with a wastewater twist. Games include:

- Bowling, using a ball from a pump and BOD bottles;
- Plunger Toss, tossing small plungers into a bucket;
- Golf Ball Chip, chipping golf balls into a toilet;
- Hockey, score a goal through a toilet seat; and
- Turd Toss, throw (plastic!) turds into a bucket.

Can you think of a better way to spend the afternoon?

There is no charge and pre-registration is not required. This is a competitive event and prizes will be awarded.

STUDENTS & YOUNG PROFESSIONALS

The Pennsylvania Water Environment Association would like to offer a special invitation to Young Professionals (YPs) thinking about coming to PennTec 2016. YPs have been participating in a number of social and service events over the years and are aiming to continue building the program. The SYP Committee is looking forward to seeing you at PennTec.

A special registration category is available for YPs who wish to attend the Conference on Monday or Tuesday. The discounted YP fee includes access to the Exhibit Hall and regular educational Conference sessions, plus continental breakfast, breaks and lunch. This registration also includes a ticket for the Plant Tour on Monday. You can choose a ticket for the Stormwater Bus Tour or the "Are You Smarter than a YP?" Challenge on Tuesday. The chart on page 5 outlines everything included. The registration form is on page 19.

Come join us at the SYP Lounge on Monday and Tuesday. This is a great place for YPs to take a break between sessions and to network with other YPs. Not a SYP member yet? It's easy to sign up. Membership applications will be on hand.

Again this year - the SYP Committee will host a Career Fair. See below for details.

The SYP Committee is planning the Tuesday Night Event and we invite you to stick around and join in for a few rounds of "Are You Smarter than a Young Professional?" Test your knowledge of wastewater-themed trivia against YPs and Seasoned Professionals alike. Play on your own or join a team. Prizes, refreshments and drink tickets will be provided.

On the Conference registration form, there is a box that you can check indicating if you are age 35 or younger. Driver's license ID is required when you check in on-site. You will be given a colored lanyard designating your YP status.

The SYP Committee has a number of events planned for 2016 and is looking forward to your participation.

Steve Kestel

SYP Committee Co-Chair

Chase Kelch

SYP Committee Co-Chair

SYP Career Fair

Tuesday, 12:45-2:45pm



The SYP Committee will be hosting a Career Fair to provide an opportunity for young professionals to meet prospective employers in the water/wastewater sector. The event will kick off with a short presentation from a senior member of PWEA who will discuss the status of the industry and employment opportunities, followed by short presentations from employers in the various aspects of the industry, and open time for prospective employees to talk with employers in attendance.

Participating companies/organizations (engineering firms, consultants, wastewater reclamation facilities, Municipalities, Authorities etc.) will be provided an area to meet with students/job seekers and interested YPs. Prior the event, flyers will be sent to Pennsylvania Universities and Colleges to provide information about the event, including a list of companies/organizations in attendance and potential job opportunities available in this field. Students will be instructed to sign up prior to the event and to bring copies of their resume to the event. Companies interested in participating in the Career Fair can register online at www.pwea.org, or they can contact Chase Kelch via email ckelch@larsondesigngroup.com.

TECHNICAL PROGRAM DETAILS

MONDAY MORNING

COLLECTION SYSTEMS PROGRAM

Moderators: Deepthi Kalyanam, Buchart Horn, Inc., and Roger Lehman, Weston Solutions, Inc.

9:00-9:30am - Private Sewer Laterals

Speaker: Ed Kelly, Storm Water Control Services, LLC

Separate Sanitary Sewer Overflows and basement flooding are caused by infiltration and inflow of the public sewer system. Private property leaks are included in contributing to these problems. This presentation will discuss both public and private sewer problems and offer low cost but common sense solutions.

9:30-10:00am - Chasing the Fish: How a Rock Bass Changed the I/I Program for Middletown Borough

Speakers: Josh Fox and Bruce Hulshizer, both with Herbert, Rowland & Grubic, Inc.

Middletown staff's firsthand knowledge transformed its I/I Program. Discovering rock bass in the fine screen of the WWTP led to locating and removing a 12-inch storm-sanitary cross connection. With this fix, instantaneous peaks have reduced, SSOs have not occurred, and rock bass reside in the stream where they belong.

10:00-10:30am - Force Main and Trunk Line Sewer Installation/Rehabilitation Utilizing Three Trenchless Technologies

Speaker: Kevin Shannon, GHD

East Pennsboro Township constructed a new force main from the Southwest Pumping Station and upgraded the Southeast Trunk sewer in order to provide adequate conveyance capacity for additional wastewater flows from Wormleysburg Borough. Challenges encountered and solutions designed and utilized will be discussed.

10:45-11:15am - Reducing Collection System Constraints through the Design of a New 600 Million Gallon Per Day Influent Pumping Station

Speaker: Meredith J. Welle, PE, HDR

A 600 MGD Influent Pumping Station will be constructed to reduce upstream hydraulic constraints. The use of CFD and physical modeling was essential in the design of the pumping station to confirm hydraulics and refine the design. Results of the modeling efforts and design impacts will be presented.

11:15-11:45am - A Regional Analysis of the Effectiveness of Data Driven O&M planning for Collection Systems

Speaker: Matt Horton, PE, Redzone Robotics

The November 2014 NASSCO performance Specifications and Guidelines for cleaning and CCTV inspection introduced a fundamental shift in strategy to comprehensive fact based O&M and Capital improvement decision making for collections systems. This presentation will identify the environmental, economic, and social impact to seven regional technology and strategy early adopters.

ENGINEERING PROGRAM

Moderators: Scott Armbrust, Pennsylvania American Water and Justin Mendinsky, Herbert, Rowland & Grubic, Inc.

9:00-9:30am - Upgrading an Old Trickling Filter Plant to Achieve Enhanced Nutrient Removal (ENR) Using MBBR Technology

Speaker: Per Struck, Whitman, Requardt & Associates, LLP

This aging 3.0 MGD facility was faced with significant challenges under the Chesapeake Bay Restoration program to meet effluent TN and TP of 3 mg/l and 0.3 mg/l. The plant's outdated trickling filters were replaced with the Moving Bed Biofilm Reactor technology to achieve the new requirements.

9:30-10:00am - Cold Climate Nitrification: Removing Ammonia from Ice-Covered Lagoons

Speaker: Todd Latchaw, Nelson Environmental Inc.

When the mercury plunges across the Northeast, it's seems impossible to get the ammonia out of a lagoon. But based on many years of data, find out how dozens of lagoon-based WWTPs across the northern states and Canada nitrify TAN to <1mg/L in water below 40°F or even 34°F.

10:00-10:30am - Upgrading Lagoons

Speaker: Todd Latchaw, Nelson Environmental Inc.

Are nutrient limits spelling the end of lagoons in North America? Quite the opposite! Learn how many continuous-discharge lagoon-based systems are already meeting tight total ammonia and phosphorus limits (<1 mg/L TAN and <0.2 mg/L TP), and the total nitrogen solutions that are just around the corner.

10:45-11:15am - North America's Largest MBR WWTP.... Breaking It Down to Make It Cost Effective with a Small Plant Mentality

Speaker: Terry M. Gellner, PE, TnT Engineering LLC

The City of Canton WRF is one of the largest MBR activated sludge plant being constructed. The average daily flow is 39 MGD and the peak day flow is 88 MGD. The cost is less than \$3.00 per gallon (ADF). Learn how this design was optimized and designed to keep the plant construction and operations simple and cost low.

11:15-11:45am - Feasible and Cost Effective MBR Activated Sludge Applications

Speaker: Terry M. Gellner, PE, TnT Engineering LLC

What are the conditions that make MBR activated sludge a viable and useful treatment process? What is the typical application of MBR activated sludge, how should it be evaluated, and what is the cost per gallon treated? This presentation will provide an overview of these questions and many more.

PROFESSIONAL WASTEWATER OPERATIONS PROGRAM

Moderator: Dennis Mike, Borough of Sewickley

9:00-9:30am - A Stream Mixing Study without Getting Your Feet Wet

Speaker: Aaron Stephens, Material Matters, Inc.

A wading rod doesn't work well for doing a stream mixing study when the stream is nine feet deep and 800 feet wide. Modern technology, including acoustic Doppler transceivers, GPS, a fluorometer, and a lot of data processing, allowed this mixing study to be completed without getting our feet wet.

TECHNICAL PROGRAM DETAILS

9:30-10:00am - Lowering Lifecycle Costs with Intelligent Motor Control Centers

Speaker: Dick McDonnell, Schneider Electric

Intelligent motor controller technologies have matured and they offer outstanding advantages in terms of reducing costs, gaining operational efficiency, and construction execution. This presentation will provide a summary of the benefits and lessons learned that would be of interest to engineering, maintenance, and management.

10:00-10:30am - Contact Adsorption Settling Thickening (CAST) Process for Treating High Strength Dairy Washwaters - Lessons Learned and Operational Results

Speaker: Jesse Semanchik, Barton and Loguidice

The Gloversville-Johnstown Joint WWTF treats washwater from a Greek yogurt manufacturer. This presentation outlines a project completed in 2015 in which an innovative pretreatment process was implemented which utilizes WAS to adsorb BOD from the washwater thereby reducing the load to the aeration system and provides an organically-rich sludge for anaerobic digestion.

10:45-11:15am - Floc Data Filtering for Improved Wastewater Clarification

Speaker: Mikel E Goldblatt, PE, Solenis

"Floc data filtering" describes the (patent pending) process of unobtrusively filtering out opaque floc particle measurement data and keeping bulk water background turbidity data from a slow mix flocculation zone, then using the kept data to adjust chemical treatment in a minimally time-lagged feedback control loop.

11:15-11:45am - Enhancing A2/O BNR Performance with Carbon Automation and Nutrient Monitoring

Speaker: Anthony Giovannone, Environmental Operating Solutions Inc.

A pilot study conducted at the Upper Blackstone Waster Pollution Abatement District in Central Massachusetts used MicroC 2000TM to augment BNR in an A2/O process. MicroC 2000TM was fed to both anaerobic and anoxic zones for EBPR and denitrification. The process was monitored with phosphate analyzers and NOx-N probes. Carbon addition was automated using a Nitrack® control system.

STORMWATER PROGRAM

Moderator: Michael Schober, KCI Technologies

9:00-9:30am - Stormwater Fees and Federalism: Variations in Stormwater Utility Form Across the United States

Speaker: Brian Alexander Chalfant, University of Pittsburgh

Drawing on in-depth case studies of stormwater utility forms in the Cincinnati, Cleveland, and Pittsburgh metropolitan regions, as well as a broader set of national analyses, this presentation explores the political, social, geographic, physiographic, demographic, and other factors that hinder or facilitate formation of multi-municipal stormwater utilities.

9:30-10:00am - Implementing a Stormwater Management Fee

Speakers: Jeremy Miller, Hampden Township, and Tony Dill, Arcadis U.S., Inc.

This presentation will describe the key steps in establishing Hampden Township's stormwater management program and fee development: public outreach, role of a stormwater advisory committee, stormwater program budget development, impervious area analysis and calculation of an equivalent residential unit, stormwater fee structures, and credit and appeals policy development.

10:00—10:30am - Establishing Specific "Goals" and "Objectives" for Your MS4 Program

Speaker: Mark D. Harman, PG, ARRO Consulting, Inc.

As we have learned from various audits and reviews of municipal MS4 programs by state and federal agencies, program Goals should reflect the intent of the program and Objectivities should provide a roadmap for reaching those goals. This session will focus on establishing municipal specific Goals and Objectives for a MS4 program.

10:45-11:15am - Overview of 2018 PAG-13 Changes

Speaker: Lee A. McDonnell, PE, PA Department of Environmental Protection

This presentation will discuss the revised 2018 Pennsylvania NPDES General Permit (PAG-13) Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s).

11:15-11:45am - Introduction to the Stormwater Institute

Speaker: Chris French, WEF Director of Stormwater Programs

This presentation will provide an overview of WEF stormwater programs and discussion of the new Stormwater Institute.

UTILITY MANAGEMENT PROGRAM

Moderator: Mark Pickering, GHD

9:00-9:30am - Current Tools for Asset Collection and Inspection

Speaker: Timothy Michael, Geo-Precision Solutions, LLC

Take advantage of the latest technologies from Esri and Trimble for data collection, inspection, and work order management. This presentation will demonstrate the latest hardware for high-accuracy GPS data collection and software solutions that allow users to collect data, record asset inspections, create reports, and dispatch additional work as needed.

9:30-10:00am - LASA Asset Management Program, Home Grown Success for Small to Medium Agencies

Speakers: Mike Kyle, Lancaster Area Sewer Authority and Phil Tiewater, Opus International

The LASA asset management program prioritizes capital and maintenance work focusing on assets with the greatest business risk. The key to success was developing the program in-house with the help of a consultant "coach". The process is now being used to develop the Authority's 5-year capital budget.

10:00-10:30am - Capital Region Water Asset Management Program

Speaker: Gage Muckleroy, GHD

Capital Region Water (CRW) has embarked on many initiatives to improve utility service to Harrisburg and tributaries. This presentation reviews CRW's developed asset management framework and presents how principles including consequence of failure, condition ratings, levels of service, performance metrics and budget planning are being used.

10:45-11:15am - Tracking Pump Station Ownership Costs Generate Data for Optimum Asset Management

Speaker: Stephen K. D'Achino, Smith & Loveless Inc.

Asset Management is critical in maintaining and evaluating equipment crucial to the successful operation of a utility. A key aspect is the collection of complete, meaningful data for each piece of equipment and the ability to evaluate data. A 12-year study will compare Wet Well Mounted PS's and submersible pumps.

TECHNICAL PROGRAM DETAILS

11:15-11:45am – Asset Management and Condition Assessment Panel Discussion

Speakers: Timothy Michael, Geo-Precision Solutions; Mike Kyle, Lancaster Area Sewer Authority; Phil Tiewater, Opus International; Gage Muckleroy, GHD; Stephen D'Achino, Smith & Loveless

This panel will discuss case studies, respond to questions, and interact with the audience regarding asset management programs and condition assessment methodologies.

MONDAY AFTERNOON

COLLECTION SYSTEMS PROGRAM

Moderators: Ed Woyden, Gannett Fleming, Inc., and Melissa Smith, GHD

1:00-1:30pm - Sealing the Connection for Large Diameter Pipes, Trenchlessly

Speaker: Rick Gage, LKM Technologies

Previous trenchless rehabilitation solutions have not been able to adequately repair large diameter lined or unlined pipe connections to the lateral. The large diameter liner uses patent pending technology that allows for the water-tight connection to be made to either the CIPP lining or to the original host pipe.

1:30-2:00pm - Taking it to the Next Level: Predictive Models Based on Over 500 Miles of Force Main Condition Assessment

Speaker: David G. Smith, Pure Technologies U.S. Inc.

Participants will gain an understanding of how to implement force main condition assessment into their asset management program and will be presented with predictive models which implement statistical methods to represent distress rates within their force main assets.

2:00-2:30pm - Effectively and Systematically Upgrading Aging Systems

Speaker: Erin Threet, Herbert, Rowland & Grubic, Inc.

A multi-municipal joint sewer authority in Northumberland County has worked to assess aged portions of their systems in an effort to identify and prioritize areas which require repair. Following the assessment, the authority scoped and completed multiple projects to achieve the most effective use of their funds.

3:30-4:00pm - Multi-Use Technology for Wet Weather and Nutrient Controls: Secondary Criteria and Beyond

Speaker: Mark Boner, WWETCO a WesTech Engineering Company

Springfield, Ohio implemented an unmanned 100-MGD CSO compressed media filter treatment technology that can also be used for tertiary filtration with phosphorous control as well as CSO treatment. After eight months and 30 events it produced average effluents of 19 mg/l TSS and 24 mg/l CBOD; within secondary treatment criteria; no chemicals; and minimal O&M.

4:00-4:30pm - Variable Frequency Motor Control – 30 Years of Lessons Learned

Speakers: Dick McDonnell and Kathy Jones, both with Schneider Electric

Modern Variable Frequency Drives (VFDs) technologies have improved dramatically enabling them to positively impact operations better than ever before. This presentation will discuss how to achieve the lowest life cycle costs using current drive technologies while avoiding the consequences of misapplications still commonly being applied today.

ENGINEERING PROGRAM

Moderator: Scott Armbrust, Pennsylvania American Water

1:00-1:30pm - Biogas Combined Heat and Electrical Power Generation Feasibility

Speaker: Tim Daily, Pennoni Associates Inc.

Factors will be presented that can be used to determine the feasibility of utilizing biogas for combined heat and electricity generation in smaller treatment plants. These factors include biosolids production and characteristics, biogas treatment, utility costs, heat recovery, and equipment costs. An example case study will be presented.

1:30-2:00pm - Wastewater to Energy (Ww2E) Project Transforms Milton Regional Sewer Authority Plant into Electrical Energy Producer

Speaker: Justin Mendinsky, Herbert, Rowland & Grubic, Inc.

Propelled by anaerobic treatment of industrial wastewater from ConAgra Foods, MRSA's Wastewater to Energy project aims to transform the Authority's conventional treatment plant into an advanced facility capable of producing more electrical power than that consumed by its treatment processes. This presentation will focus on results achieved since plant startup.

2:00-2:30pm - Aerobic Granular Sludge: An Emerging Strategy to Improve Settability

Speaker: Mark Strahota, Hazen and Sawyer

Aerobic granular sludge growth is an emerging strategy to encourage proliferation of large, heavy granules that settle rapidly. WERF is conducting a study to test strategies to promote granulation, including the use of hydrocyclones and metabolic selectors. This presentation will summarize the study objectives and approach.

3:30-4:00pm - Is Disinfection Needed? MBR Activated Sludge Treatment Process

Speaker: Terry M. Gellner, PE, TnT Engineering LLC

Is disinfection following MBR activated sludge needed, if the MBR process alone removes microorganisms as well as or better than conventional technologies with disinfection? The overall goal of this study was to sample at multiple WWTP's to determine the effectiveness of disinfection following MBR and conventional activated sludge treatment.

4:00-4:30pm - PAA – An Alternative Wastewater Disinfectant: Can It Work for You?

Speaker: Brian Hilts, CDM Smith

PAA is a wastewater disinfection alternative gaining interest due to its ability to provide bacterial inactivation at costs competitive to other mature technologies over a wide range of effluent qualities. This presentation will focus on key engineering considerations that lead to successful testing, piloting, permitting, and implementation of the technology.

STORMWATER PROGRAM

Moderator: Nathan Walker, Amec Foster Wheeler

1:00-1:30pm - Modernizing the Model for Stormwater Management and Floodplain Planning and Restoration

Speaker: April M Barkasi, PE, Cedarville Engineering Group

Current methods of modeling watersheds rely heavily on preparing digital maps of the watershed basins. These methods consist of large scale terrain models derived from various topological data. The data varies greatly in accuracy, complexity and cost to obtain.

TECHNICAL PROGRAM DETAILS

1:30-2:00pm - Sizing BMPs Based on Different Climate Scenarios for More Sustainable Stormwater Management

Speaker: Jason Berner, US EPA Office of Research and Development

EPA's National Stormwater Calculator estimates the annual amount of rainwater and runoff frequency from a specific site anywhere in the US. Estimates are based on local soil conditions, land cover, and historic rainfall records. Users can then test the effectiveness of different types of low impact development controls.

2:00-2:30pm - How Can Emerging Technologies Such as Continuous Monitored Adaptive Control (CMAC) Help to Support Sustainable Stormwater Infrastructure

Speaker: Marcus Quigley, PE, OptiRTC, Inc.

Performance based contracting can allow space for innovation while also reducing risk. What technologies are most promising? Adaptive control optimizes the function of existing and new stormwater assets and dramatically improves return on investment. Continuous monitoring effectively reduces cost and better quantifies investment, performance, and compliance risk.

3:30-4:00pm - Historic Fourth Ward Park: A Model for Green Infrastructure Partnerships, Co-Benefits and Envision®

Speaker: Julie Stein, LEED AP BD + C, ENV SP, HDR

Located in a lowland area, the Clear Creek Basin watershed in the heart of Atlanta's Historic Fourth Ward was subject to flooding and overflows. Plans to address this problem with sewer pipes and tunnels were replaced with a beautiful park that manages stormwater and helped to revitalize an entire neighborhood.

4:00-4:30pm - Innovative Techniques to Stormwater Management in the Spring Creek Watershed

Speaker: David A. Smith, University Area Joint Authority

University Area Joint Authority initiated a green infrastructure program to reduce nutrient pollution from non-point sources and protect water quality in the Spring Creek Watershed. UAJA is investing in innovative techniques including porous pavement, vegetated riparian buffers, bioswales, and conversion of urban lands to constructed wetlands and riparian forests.

UTILITY MANAGEMENT PROGRAM

Moderator: Peter Pineda, South Whitehall Township

1:00-1:30pm - An Approach to Select an Appropriate Sidestream Deammonification Technology

Speaker: Sarah Galst, Hazen and Sawyer

The Philadelphia Water Department is evaluating the implementation of a deammonification process for sidestream treatment. By taking into account both cost and non-cost criteria, such as operational complexity, flexibility, and adaptability, they ensured that the selected process will meet treatment, operational, and financial requirements while integrating with the utility's culture.

1:30-2:00pm - A Comparison of Class B Biosolids End Use Options

Speaker: Nicholas Sahd, Material Matters, Inc.

This presentation will describe alternative analyses and cost comparisons of various end uses of Class B dewatered biosolids, including landfill, incineration, contracted land application programs, self-managed land application programs, and mine reclamation. These evaluations include a return on investment component and/or a life cycle cost comparison.

2:00-2:30pm - Balancing Hydraulic Model Complexity and User-Friendliness: A Solution to a Plant-Wide Hydraulic Model as Both an Operations and Planning Tool

Speaker: Nishant Shah, Greely and Hansen

Three plant-wide hydraulic models were custom built to determine existing plant hydraulic capacities and model future improvements for increased capacity. The need to model both asymmetrical flow splits and submerged weirs necessitated generalized spreadsheet macros to perform 2+ iterative calculations simultaneously. Models are user-friendly and accessible to anyone within the organization.

3:30-4:00pm - The University Area Joint Authority - Odor Control Study: Odor Assessment

Speaker: Robin C. Brandt, PhD, PE, Material Matters, Inc.

Increased odor complaints received at the Spring Creek Pollution Control Facility prompted the University Area Joint Authority to commission an Odor Control Study. This session will outline the procedures used to quantify major odor emission sources.

4:00-4:30pm - The University Area Joint Authority - Odor Control Study: Odor Treatment Alternatives Evaluation

Speaker: Benjamin R. Burns, Herbert, Rowland & Grubic, Inc.

Increased odor complaints received at the Spring Creek Pollution Control Facility prompted the University Area Joint Authority to commission an Odor Control Study. This session will outline the procedures used to identify practical mitigation strategies/equipment.

TUESDAY MORNING

BIOSOLIDS PROGRAM

Moderators: Stefan Weaver, Material Matters, Inc. and Jason Wert, RETTEW

8:00-8:30am - Land Application of Biosolids in a Deep Row Hybrid Poplar Trench System

Speaker: Jacob B. Gogno, Material Matters, Inc.

This presentation describes the research of land applying biosolids in a deep-row hybrid poplar trench system at an application rate of 172 DTPA on a 4-acre site in Pennsylvania. After one year of entrenchment, results from monitoring groundwater, biosolid characteristics, gas emissions, and poplars indicated that this can be a potential application method for Pennsylvania.

8:30-9:00am - Biogas to Vehicle Fuel

Speaker: Eric Wilgenbusch, Unison Solutions, Inc.

As more wastewater treatment facilities try to make the most from their biogas, there was a gap in the technology to convert biogas to a compressed renewable natural gas (RNG) fuel. A patent pending system to produce a RNG fuel from biogas has been developed by Unison Solutions, Inc.

9:00-9:30am - Effect of Sequential Improvements to Plant Operations on Biogas Generation and Solids Reduction in Bethlehem, Pennsylvania

Speaker: Angela M. Hintz, ARCADIS

After biosolids treatment performance at the Bethlehem Wastewater Treatment Plant was evaluated and deemed to not be performing up to par, the City undertook a phased capital program to implement improvements to sludge thickening, digestion, and dewatering processes with improvements noted after each phase was completed.

TECHNICAL PROGRAM DETAILS

10:30-11:00am - Bulk Food Waste: Can It Be a Viable Revenue Source?

Speaker: Mark Strahota, Hazen and Sawyer

Derry Township Municipal Authority (Hershey) and Hazen and Sawyer evaluated receiving bulk food waste (BFW) to increase biogas production from DTMA's egg-shaped digester. The results of the market assessment and cost effectiveness evaluation, as well as design considerations for a BFW receiving facility, will be presented.

11:00-11:30am - Class A Biosolids Operation and Permitting at the Hermitage Municipal Authority

Speaker: Jason Wert, PE, BCEE, RETTEW

This presentation will explore the permitting and operational challenges to implementing an anaerobic digestion based Class A Biosolids Program at the City of Hermitage with co-digestion of pre- and post-consumer food waste. Topics to be reviewed include de-packaging of food waste expansion, operation of temperature phased anaerobic digestion and the permitting challenges to achieving a Class A Certification.

COLLECTION SYSTEMS PROGRAM

Moderators: Bruce Hulshizer, Herbert, Rontard & Grubic, Inc., and Kate Mechler, Hatch Mott MacDonald

8:00-8:30am - The Role of Preventative Maintenance in Establishing an Asset Management Program

Speaker: Matthew Grandinetti, Duke's Root Control, Inc.

This presentation will provide a review of the most current research pertaining to asset management within the presenter's 30 years of field experience.

8:30-9:00am - Are You a Folder or a Scruncher? The Wacky World of Negotiating Flushability

Speaker: Rob Ville, Plainfield Area Regional Authority

This presentation will cover the ongoing negotiations between the wastewater industry and manufacturers on the 4th Edition of the INDA Flushability Guidelines scheduled to be released in June and discussion on work being done on an international basis in ISO TC224 WG10, testing and other drivers influencing this issue.

9:00-9:30am - A Clean Sewer is a Happy Sewer

Speakers: Jack Longstreet, York City Sewer Authority, and Deepthi Kalyanam, EIT, Buchart Horn, Inc.

Sewage blockages can create havoc to public agencies causing sanitary sewer overflows in addition to causing damage to private property. The presentation will discuss preventive maintenance programs including public education programs to eliminate sewage backups/blockages.

10:30-11:00am - Keep Air from Clogging Your Force Main

Speakers: Michael J. Gillespie, PE, and Charles A. Hoffman III, EIT, both Envirep, Inc.

Air accumulation severely reduces the carrying capacity of force mains and causes higher pump discharge pressures, lower pumping rates, higher power costs, and increased equipment maintenance. This presentation will discuss the symptoms and effects of air in force mains, troubleshooting techniques, and proper placement of air release/vacuum breaker valves.

11:00-11:30am - Why Inspect FSE's for FOG

Speaker: Gary Parks, Peters Township Sewer Authority

FOG management is most likely the last thing on an FSE manager's mind. FOG can disrupt their operation or cause an SSO in the sanitary sewer main. We will discuss how and why you should have a FOG program and conduct regular FOG compliance visits and sampling.

ENGINEERING PROGRAM

Moderator: Scott Armbrust, Pennsylvania American Water and Justin Mendinsky, Herbert, Rowland & Grubic, Inc.

8:00-8:30am - Pennsylvania American Water Improves the Clarion Wastewater Collection and Treatment System to Manage Large Peaking Factor

Speaker: Jed A. Fiscus, Pennsylvania American Water Company

In 2008, the Pennsylvania American Water Company acquired the sewage collection and treatment facilities from Clarion Area Authority and entered into a COA with PA DEP. The presentation focuses on the implementation of three projects that addressed the sanitary sewer overflows that would occur in the system during storm events.

8:30-9:00am - Decentralized Wastewater Collection and Advanced Treatment Technology

Speaker: Julie Barown PE, Orenco Systems, Inc.

This presentation demonstrates the affordability of an effluent sewer and how effective the textile media in an AdvanTex treatment unit treats the effluent before dispersal. It will also refer to a case study where the city discharges its effluent into a nearby creek with strict ammonia limits.

9:00-9:30am - Have The Rules Changed for Vortex Grit Removal?

Speaker: Ryan Asbury, Smith & Loveless Inc.

Efficient grit removal is fundamental for protecting and optimizing downstream Water Resource Recovery Facility processes and equipment. Recent activity has placed an emphasis on the nature of grit, resulting in more comprehensive and advanced studies. The article will discuss complete aspects of five professional grit characterization and efficiency tests recently conducted at different WWTPs.

10:30-11:00am - New Technologies for Pump and Driver Health Assessments

Speaker: Jay Marchi, ProPump Services

Identifying problems and potential component failures on pumps and their drivers is the heart of any predictive maintenance (PdM) program. Portable vibration analyzers have become the primary tools for many reliability engineers. While a powerful tool, vibration analysis provides only a portion of the complete picture of machinery condition.

11:00-11:30am - Innovative Progressive Cavity Pump Design: Two Stage Smart Conveying Technology for Higher Pressure Applications

Speaker: John Salyers, SEEPEX Inc.

The purpose of this presentation is to inform that due to rotor and stator innovation, progressive cavity pumps with the split stator Smart Conveying Technology design allow for the lowest lifecycle costs of any PC pump in terms of maintenance times and costs, parts replacement, and energy efficiency.

RESEARCH PROGRAM

8:00-11:30am - Student Research Podium Presentations

The Research Program showcases the ongoing research activities of students (graduate or undergraduate) in the field of wastewater, water quality and environmental management relevant to Pennsylvania. The PWEA Research Committee reviews the student research abstract submissions and selects the papers which will be presented at the Conference. The Research Program also includes poster presentations which will be available for viewing during the midday break. Each of the student presenters will receive the PWEA Student Research Award during the Research Program.

TECHNICAL PROGRAM DETAILS

WATER SUSTAINABILITY & REUSE PROGRAM

*Moderators: Lucinda Pype, CDM Smith, and
Anthony Elberti, Gannett Fleming, Inc.*

8:00-8:30am - The Energy Production, Economic Benefits and Advancements of quasar energy group's Anaerobic Digestion System Integrated with Wastewater Treatment Plants in a Public/Private Partnership

Speaker: Renato Contipelli, quasar energy group

This presentation examines the Wooster Renewable Energy (WRE) project, including its performance statistics, in which anaerobic digestion technology was incorporated at the City of Wooster (OH) Waste Pollution Control Plant. This project stands as an ideal model for the possible future of integrating inefficient infrastructures with high solids anaerobic digestion technology.

8:30-9:00am - Water Mining and Recovery for Golf Course Irrigation

Speaker: Bill Fisher, Dynatec Systems

This presentation will show how sanitary wastewater can be extracted from a sewer system and treated efficiently and cost effectively in order to be reused in various applications, including golf course irrigation.

9:00-9:30am - The Use of Algal Biofilms to Enhance Decentralized Community and Commercial On-site Wastewater Treatment

Speaker: Dan Johnson, OneWater, Inc.

Algal biofilms leverage the mutually symbiotic relationship between algae and bacteria to create a diverse treatment ecology that is controlled, stable and delivers many treatment benefits. This relationship dramatically decreases the demand for costly external aeration. This technology is particularly applicable to decentralized wastewater treatment with variable flows and loading.

10:30-11:00am - Got Gas? Identifying High Strength Wastes Suitable for Co-Digestion at Blue Plains AWWTP

Speaker: Lisa Boudeman, Material Matters, Inc.

This presentation will discuss the steps to complete a market assessment to identify regionally available food processing wastes for codigestion at the Blue Plains Advanced Wastewater Treatment Plant. Topics covered include developing survey questions, identifying and surveying waste haulers and industrial facilities, and developing potential marketing considerations and pricing strategy.

11:00-11:30am - Sustainable Success: Case History of Hershey's Mill Village's Successful Use of Effluent Irrigation

Speaker: Thomas G. Pullar, PE, EarthRes Group, Inc.

For over 35 years, treated wastewater generated by Hershey's Mill Village has been used to irrigate the championship golf course winding through the property demonstrating successful sustainability and reuse. The case history presents the unique aspects of design, permitting, controls, and professional operations employed by this showcase facility.

TUESDAY AFTERNOON

BIOSOLIDS PROGRAM

Moderators: Stefan Weaver, Material Matters, Inc. and Jason Wert, RETTEW

1:00-1:30pm - 21st Century Odor Control: Photoionisation

Speaker: Calvin Pride, PhD, Ambio Biofiltration Ltd.

There is a new odor control technology now being used in many North American WWTPs called Photoionisation. Developed and used extensively in Germany and elsewhere (350 plus installations) over the last decade, it is gaining popularity in North America (20 installations) where performance and footprint are issues.

1:30-2:00pm - No Screw Up On Low Input, High Performance Dewatering – An Overview of the Screw Press Installation in Antrim Township

Speaker: Hannah Stewart, GHD

The Antrim Township Municipal Authority consulted with GHD to investigate dewatering technologies to replace an inoperable plate frame press. This presentation will focus on that investigation, discuss why the screw press was selected, and analyze the performance of the screw press through its first year of operation.

2:00-2:30pm - Industry Update for WASSTRIP on WRRF Nutrient Flows, Digestion and Dewatering of Bio-P Sludge

Speaker: Michael Ditton, Ostara Nutrient Recovery

This presentation will provide an industry update on the impact of WASSTRIP technology on digested sludge dewaterability, reduction in dry-solids mass production, and reduction in biosolids phosphorus content. With the reversal of Bio-P related dewaterability, and nuisance struvite concerns, industry professionals will understand how WASSTRIP can be the missing link to alleviating EBPR process concerns.

3:30-4:00pm - Mainstream Deammonification Using the ANITA Mox Process

Speaker: Chris Thomson, PE, Kruger, Inc.

ANITA™Mox, a robust deammonification system in moving bed bioreactor (MBBR) or integrated fixed film activated sludge (IFAS) configurations, successfully treated mainstream effluent at both pilot- and prototype-scale systems using IFAS. Studies show promising removals and suppression of NOB activity. Additional studies are planned to demonstrate ANITA Mox for mainstream deammonification.

4:00-4:30pm – Drying Biosolids: The Experience of Two Pennsylvania Communities

Speaker: Ed Pietroski, Entech Engineering, Inc.

Entech performed feasibility studies for two mid-sized WWTPs in Pennsylvania to evaluate the effect of Biosolids Dryers to produce Class A Biosolids. Now that the upgrades have been in place for a few years, we will review actual results, the status of the programs to date, and look at lessons learned over time.

TECHNICAL PROGRAM DETAILS

COLLECTION SYSTEMS PROGRAM

Moderators: Tony Dill, ARCADIS, and Marilyn Baron, EPOXYTEC

1:00-1:30pm - Use of a Computerized Maintenance Management System (CMMS)

Speaker: Pete Hartman, Lancaster Area Sewer Authority

The presentation will describe how LASA's daily workflow integrates with the maintenance management software and how it has enabled the Authority to operate more efficiently and effectively. LASA has also integrated other programs with the maintenance management software to enable it as a central hub of information for their infrastructure.

1:30-2:00pm - Improvements in Chemical Grouting Practices from the Sullivan's Island Construction Management at Risk Project

Speakers: Jim Shelton and Emily Sadowsky, ARCADIS

This presentation discusses key findings regarding implementation of chemical grouting for I&I leakage control implemented via a Construction Management at Risk project in Sullivan's Island, SC. Collaboration between engineering, contracting, and manufacturing significantly furthered the practical science of chemical grouting for stabilizing sewer piping and significantly reducing leakage.

2:00-2:30pm - Sewer Line Installation Issues

Speakers: Carl Rundquist, Antrim Township Municipal Authority, and Deepthi Kalyanam, EIT, Buchart Horn, Inc.

The presentation will include discussion on problems/issues of sewer lines installation, pipe sagging/bellies in sewer line and methods to fix it.

3:30-4:00pm - Beyond Pump Station Basics – Pump Selection, Arrangements, Retrofits, Energy Reduction, and O&M Considerations

Speaker: Charles Hurst, ARCADIS

The presentation includes pump station design concepts such as pump type alternatives, proper sizing approaches, wet well sizing/configuration, and O&M considerations. Evaluation of existing pump stations for retrofit/capacity improvements will also be discussed. The presentation will highlight how these topics have a major impact on pumping efficiency/energy consumption.

4:00-4:30pm - Examination and Evaluation of Pump Vibrations

Speaker: Sara Urbanczyk, Geiger, Inc.

This session will give you an overview of how to monitor and evaluate pump vibrations and how to incorporate these measurements into a comprehensive preventative maintenance plan. Troubleshooting procedures and simple remedies for addressing vibrations will also be discussed.

INDUSTRIAL PRETREATMENT PROGRAM

Moderators: Judy Musselman, GHD, and Deb Watkins, O'Brien & Gere

1:00-1:30pm - Metal Plating Pretreatment Facility Upgrade

Speaker: Agustin Conesa, SSM Group, Inc.

This presentation will include a description of the general metal plating process, reasons and challenges to upgrade the existing pretreatment facility, chromium removal chemistry and proposed pretreatment facility process alternatives.

1:30-2:00pm - Reducing BOD Discharge from a Beverage Manufacturing Facility Using Bioaugmentation

Speaker: Peter Norman, GE Water & Process Technologies

A beverage manufacturer was facing increased effluent surcharges based on BOD discharges and was considering construction of a secondary industrial wastewater treatment facility. Implementation of a wastewater bioaugmentation program reduced BOD discharges 35% and avoided upgrade costs.

2:00-2:30pm - Solving Headworks Problems

Speaker: Robin Schroeder, Blue Water Technologies, Inc.

Three rotating belt filter case studies will be presented which highlight the removal of BOD and solids upstream of municipal wastewater treatment facilities. Such devices can replace primary clarification for influent or CSO wastestreams.

3:30-4:00pm - Membrane Filtration of Landfill Leachate

Speaker: Scott Grieco, O'Brien & Gere

Leachate from municipal waste landfill sites is considered a complex mixture of dissolved organics, nutrients and inorganic salts. This presentation provides a comparison of RO application to landfill leachate. Direct treatment, post-SBR treatment, and post-MBR treatment, including the design basis and technical performance from actual full-scale and pilot-scale installations will be presented.

4:00-4:30pm - Tertiary Cloth Media Filtration

Speaker: Kurt Lindsley, Fluidyne Corporation

Fixed plate cloth filters combine the latest cloth technology with unique hydraulics to eliminate rotating discs, spray bars, and other mechanical moving parts while reducing TSS/NTU to tertiary/reuse quality levels.

PROFESSIONAL WASTEWATER OPERATIONS PROGRAM

Moderator: Kevin Fisher, Western Westmoreland Municipal Authority

1:00-1:30pm - Removing Phosphorous and Trace Metals to Meet Stringent Permit Limits: A Series of Case Studies Using Reactive Filtration

Speaker: Robin Schroeder, Blue Water Technologies, Inc.

Three case studies are presented, one industrial and two municipal, where reactive filtration was used to reduce phosphorous values below 0.075 mg/L and various trace metals to <10 ng/L. These case studies demonstrate reaching high quality effluent is both possible and cost effective.

1:30-2:00pm - Monitoring NO2 Online – 25 Years Hunting an Elusive Quarry

Speaker: Bruce P. Stevens, ASA Analytics

The importance of monitoring nitrite ranges from potable water distribution systems where it is a serious health risk to WWTFs where it is also toxic to AOBs and can cause excess chemical consumption during disinfection with chlorine. Some of the research and field trials undertaken to master the art of detecting and monitoring accurately in real time in both clean water and MLSS will be discussed.

2:00-2:30pm - Innovative IFAS: A Pennsylvania Story

Speaker: Jason Bowman, Entex Technologies Inc.

This presentation will focus on the implementation methods used and results of two full scale fixed-media IFAS installations within the state of Pennsylvania, including the first Pure Oxygen IFAS plant. Ammonia and Total Nitrogen results following five-years of operation will be discussed.

TECHNICAL PROGRAM DETAILS

3:30-4:00pm - Treatment Plant Safety

Speaker: Kelly Kramer, CECD, HEM, RETTEW

A wastewater treatment plant might present many safety hazards to workers on site. This presentation will identify the most common hazards and provide practical solutions to eliminate or mitigate each.

4:00-4:30pm - CyberSecurity - What Do I Need to Do?

Speaker: Dick McDonnell, Schneider Electric

Cybersecurity concerns have been growing within the water industry causing the need for utilities to understand the available guidance, tools, standards, and requirements expected of them. This presentation will help utilities understand several steps necessary to evaluate and secure their cyber assets in accordance with the latest industry directives.

WEDNESDAY MORNING

CONSTRUCTION PROGRAM

Moderator: Scott Armbrust, Pennsylvania American Water

8:00-8:30am - The Montevina Story - Merging Integrated Delivery and Process Innovation for a Cost Effective Project Upgrade

Speaker: Rich Atoulikian, HDR Engineering, Inc.

The San Jose Water Company (CA) is using progressive design-build to upgrade their existing treatment facility's capacity and enhance process performance through the use of hydraulic flocculation, enhanced settling and membrane filtration. All of these improvements are being incorporated into an existing functional facility while maintaining current capacity.

8:30-9:00am - Don't Forget About the Front Ends! Know Your Role When It Comes to the Contract

Speaker: Tim Parthemore, GHD

Engineering design of large capacity interceptors is complicated. Environmental conditions, utility conflicts and construction methods must be considered. Sometimes, however, in a competitive bid environment even with detailed plans, things don't go as expected. Engineers and Owners must be aware of their duties and responsibilities under EJCDC General Contract Conditions to deal with construction conditions and contractor performance that may increase the Owner's risk of successful project completion. This presentation provides a case study of a large capacity interceptor project that experienced and mitigated significant Owner financial risk to project completion.

9:00-9:30am - Utilizing Systematic Planning and Innovative Technologies for a Cost Effective Project

Speaker: Joel Kostelac, PE, BCEE, GHD

Cranberry Township was faced with the need to upgrade and expand their treatment facility for future growth and to eliminate a high flow blending operation. Accordingly, the Township underwent a systematic approach to developing alternatives, establishing a design basis, and designing and commencing construction of a new 30 mgd MBR facility.

10:00-10:30am - Ventilation for Wastewater Facilities and NFPA 820

Speaker: William L. Bohner, Jr., PE, ARRO Consulting, Inc.

This presentation is intended to provide a basic understanding of how the National Fire Protection Association (NFPA) Standard 820 impacts ventilation and electrical code requirements for wastewater collection, conveyance, and treatment facilities. There will be an emphasis on the ventilation needs of specific processes and what needs to be accomplished in order to establish the appropriate type of classification for electrical components and controls.

10:30-11:00am - Dynamic Seals: The "Sealing Ability Versus Seal Life" Compromise - Materials, Processes, Options

Speaker: Lorene Bruns, Duperon Corporation

This presentation will review the properties and selection criteria for dynamic seals in wastewater applications. The impacts of the inherent compromise between sealing ability and seal life will be reviewed along with the materials, processes and options that may affect seal mechanics and application engineering.

FINANCE PROGRAM

Moderator: Adrienne Vicari, Herbert, Rowland & Grubic, Inc.

8:00-11:00am - Strategic Financial Planning - How to Maximize Available Dollars to Fund Long-term Needs

Formulating an effective response to the financial challenge of maintaining critical infrastructure and/or complying with increased government regulations requires knowledge of the variety of approaches to sound financial planning. This session will provide insight into strategies such as asset management and capital improvement planning. It will also cover the legal aspects of pursuing complex transactions such as the creation of stormwater authorities and leasing of utilities and how to determine if these solutions are a right fit for your community. In addition, presenters will discuss available funding sources and how to design a unique package to fit your utility's goals.

8:00-8:30am - Asset Management and Capital Improvement Planning

Speakers: Adrienne M. Vicari, PE, and Russell F. McIntosh, both with Herbert, Rowland & Grubic, Inc.

8:30-9:00am - Financing Your Infrastructure Needs through USDA

Speaker: Susanne Gantz, USDA Rural Utility Service

9:00-9:30am - Updates to PENNVEST Financing for Water, Wastewater and Stormwater Facilities

Speaker: Brion Johnson, PENNVEST

10:00-10:30am - Private Financing

Speaker: Michael Gossert, M&T Bank

10:30-11:00am - Legal Aspects of Pursuing Complex Financial Transactions

Speaker: E. Lee Stinnett II, Esq., Salzmann Hughes PC



PENNTec 2016 WORKSHOPS

The following workshops are being offered during PennTec 2016 on June 6-8 at the Penn Stater Conference Center Hotel in State College, PA. You may add these courses to your PennTec registration, or you may register for individual course(s) separately. You must register in advance for these courses. All courses are limited to 40 attendees.

Monday, 9:00am-3:00pm

Overview of Portable Pumps and Generators

A PWO Committee Workshop

This course is PA DEP approved for **4.0 water & wastewater contact hours**. Course ID 6638.

Speaker: Peter Snow, Xylem Water Solutions

The purpose of this course is to improve the operator's knowledge and abilities to safely and properly operate a portable pump or generator. Pump and generator theory will be discussed, as well as the safety aspects associated with both pieces of equipment. Hands-on training for both generator sizing and actual operation of provided equipment will be done. Handouts included.

Monday, 9:00am-4:30pm

Industrial Pretreatment Laboratory Data

An Industrial Pretreatment Committee Workshop

This course is PA DEP approved for **7.5 wastewater contact hours**.

Speakers: Judy Musselman, GHD; Sara Stump, Suburban Water Testing; John Lovell, US EPA; and Mark Strahota, Hazen and Sawyer

Wastewater sampling and testing are core requirements of industrial pretreatment programs. This workshop will provide some insight into selection of laboratories, proper sampling techniques, how to select test methods, understanding test reports and how the test data may impact the wastewater treatment plant. Handouts included.

Monday, 1:00-4:30pm

Fecal Forum II

A Lab Practices Committee Workshop

This course is PA DEP approved for **3.0 water & wastewater contact hours**. Course ID 6483.

Speaker: Gil Dichter, IDEXX Laboratories

This course will present the Coli-18 Method to test for fecal coliform. It will feature a hands-on demonstration. The course will also instruct the students on how to apply to DEP for approval to use this testing method in their lab. Student notebook included.

Monday & Tuesday, 8:00am-5:30pm

Activated Sludge Refresher Course

A PWO Workshop

This two-day course is PA DEP approved for **16.0 wastewater contact hours**. Course ID 3884. (You must attend both days to receive credit.)
Speakers: Jenifer Fields, PA DEP SERO, and Thomas Brown, PA DEP

This course was developed as a preparatory course for the activated sludge certification exam, as well as a refresher for certified operators. Students will be provided with a vocabulary list in order to become familiar with the material before classroom training. Training includes exam taking skills and practice, math drills, concept reinforcement, confidence building, homework, and a supportive learning environment. Student notebook included.

Tuesday, 8:00am-2:00pm

NFPA 70E Electrical Safety in the Workplace

A Safety Committee Workshop

This course is PA DEP approved for **4.0 water & wastewater contact hours**. Course ID 6853.

Speaker: Kelly Kramer, RETTEW

National Fire Protection Association (NFPA) 70E identifies four protective strategies for employees working on and around live electrical equipment, including troubleshooting. This class shall cover the requirements under the 70E standard for creating an electrically safe work condition, training, planning tasks and selection and use of protective equipment. Handouts included.

Tuesday, 8:00am-4:30pm

Laboratory Supervisor Training

A Lab Practices Committee Workshop

This course is PA DEP approved for **6.0 water & wastewater contact hours**. Course ID 6759.

Speaker: Larissa Hoover, Cranberry Township

Students will learn common lab terms, the role and expectations of a lab supervisor, current Chapter 252 regulations, and typical calculations used to evaluate lab data. The course will be presented in five sections: background information and general provisions; general standards; QA/QC requirements; proficiency study, onsite assessment requirements and miscellaneous provisions; and basic math. This course may help students prepare to take the laboratory supervisor. Handouts included.

Tuesday, 8:00am-4:30pm

Introduction to Wastewater Treatment

A Training Committee Workshop

This course is PA DEP approved for **5.0 wastewater contact hours**. Course ID 6563.

Speaker: Curtis Miller, KCI Technologies, Inc.

The primary purpose of this course is to provide participants with an introduction to basic concepts of wastewater collection and conveyance systems, the wastewater treatment process, the roles of the treatment plant operator, and the regulations that govern wastewater treatment plant operations. This is an excellent course for anyone planning to take the Operator Certification Exam. Student notebook included.

Tuesday, 1:00-4:30pm

Three Hour Energy – The Math Behind the Savings

A Training Committee Workshop

This course is PA DEP approved for **3.0 water & wastewater contact hours**. Course ID 6545.

Speaker: Walter Higgins, US EPA

This course will provide the operator with an understanding of the way their facility is billed for electrical use. It will review those factors that can reduce electrical usage. Finally, it will cover financing energy reducing projects.

Wednesday, 8:00-11:30am

Fats, Oils & Grease (FOG)

A Collection Systems Committee Workshop

This course is PA DEP approved for **3.0 wastewater contact hours**. Course ID 6659.

Speakers: Adam Hemminger, Highland Tank, and Gary A. Parks, Peters Township Sanitary Authority

This workshop will outline ways to prevent FOG from entering the wastewater collection and conveyance system; how FOG is treated at treatment facilities; and how successful FOG programs are being administered and enforced. Handouts included.

Wednesday, 8:00am-12:00pm

Responsibilities of Clean Water Professionals

A PWO Committee Workshop

This course is PA DEP approved for **3.5 wastewater contact hours**. Course ID 7122.

Speaker: Thomas Brown, PA DEP

This course will include an introduction to the Wastewater Operator Code of Ethics. Discussions will include protecting and maintaining the wastewater system; laws, rules and regulations that impact wastewater operators; and security and emergency planning for wastewater. Upon conclusion of this course, students will be able to describe the importance of good communication and establish a communication system with system owners, customers, and regulatory agencies and they will be ready to accept and carry out the responsibilities and rewards of being a Clean Water Professional. Handouts included.

2016 WORKSHOP REGISTRATION FORM

PLEASE PRINT

Registrant Name: _____ Nickname (for badge): _____
 Organization: _____
 Mailing Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ Fax: _____
 Email Address: _____
 PWEA Member #: _____ PA DEP Client #: _____ PE License #: _____

☐ Check here if you are a Young Professional. (Age 35 or younger; Driver's License ID required.)

Note: a copy of your PA DEP Client ID Card (or PA DEP License) must be submitted with your registration if you are attending for PA DEP contact hours.

	NO FEE WITH FULL PENNTEC REGISTRATION*		FEE FOR WORKSHOP ONLY** BY MAY 15	ONSITE
Monday, 9:00am-3:00pm - PWO Committee Overview of Portable Pumps and Generators PA DEP approved for 4.0 water & wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$80 <input type="checkbox"/> \$135	<input type="checkbox"/> \$100 <input type="checkbox"/> \$155
Monday, 9:00am-4:30pm - Industrial Pretreatment Committee Industrial Pretreatment Laboratory Data PA DEP approved for 7.5 wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$140 <input type="checkbox"/> \$195	<input type="checkbox"/> \$160 <input type="checkbox"/> \$215
Monday, 1:00pm-4:30pm - Lab Practices Committee Fecal Forum II PA DEP approved for 3.0 water & wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$65 <input type="checkbox"/> \$120	<input type="checkbox"/> \$85 <input type="checkbox"/> \$140
Monday & Tuesday, 8:00am-5:30pm - PWO Committee Activated Sludge Refresher Course (this is a two-day course) PA DEP approved for 16.0 wastewater contact hours	***	PWEA Member Non-Member	<input type="checkbox"/> \$245 <input type="checkbox"/> \$300	<input type="checkbox"/> \$265 <input type="checkbox"/> \$320
Tuesday, 8:00am-2:00pm - Safety Committee NFPA 70E Electrical Safety in the Workplace PA DEP approved for 4.0 water & wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$80 <input type="checkbox"/> \$135	<input type="checkbox"/> \$100 <input type="checkbox"/> \$155
Tuesday, 8:00am-4:30pm - Training Committee Introduction to Wastewater Treatment PA DEP approved for 5.0 wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$105 <input type="checkbox"/> \$160	<input type="checkbox"/> \$125 <input type="checkbox"/> \$180
Tuesday, 8:00am-4:30pm - Lab Practices Committee Laboratory Supervisor Training PA DEP approved for 6.0 water & wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$125 <input type="checkbox"/> \$180	<input type="checkbox"/> \$145 <input type="checkbox"/> \$200
Tuesday, 1:00pm-4:30pm - Training Committee Three Hour Energy - The Math Behind the Savings PA DEP approved for 3.0 water & wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$65 <input type="checkbox"/> \$120	<input type="checkbox"/> \$85 <input type="checkbox"/> \$140
Wednesday, 8:00am-11:30am - Collection Systems Committee Fats, Oils and Grease (FOG) PA DEP approved for 3.0 wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$65 <input type="checkbox"/> \$120	<input type="checkbox"/> \$85 <input type="checkbox"/> \$140
Wednesday, 8:00am-12:00pm - PWO Committee Responsibilities of Clean Water Professionals PA DEP approved for 3.5 wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$70 <input type="checkbox"/> \$125	<input type="checkbox"/> \$90 <input type="checkbox"/> \$145

* To qualify for complimentary workshop registration with your full PennTec registration, attach this form to the completed registration form found on page 19.

** One check may be issued for the combined total due for Conference Registration and Workshop Registration

*** Not available with full Conference registration. Attendance requirements for this course prohibit participation in Conference sessions and activities.

Method of Payment

☐ Check (payable to PWEA) ☐ MasterCard ☐ Visa ☐ American Express Total Due: \$ _____
 Card Number: _____ Expiration Date: _____ Security Code: _____
 Name (as it appears on card): _____ Signature: _____
 Billing Address (if different from above): _____

Cancellation/Substitution Policy

No refunds granted after April 30th. A \$50 cancellation fee will be assessed on all refund requests received by April 30th. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 15th and must be made in writing, accompanied by a new registration form.

Please send completed registration form and full payment to:

PWEA • PO Box 61 • Blossburg, PA 16912

Fax: 570-549-2221 • Phone: 570-549-2204

Email: cindyrock@pwea.org

Penn Stater Conference Center Hotel • State College, PA

EXHIBIT HALL & NETWORKING EVENTS

The Exhibit Hall is a very important part of the PennTec Conference. The exhibits will open on Monday at 11:45am and will close on Tuesday at 5:30pm. Visiting the vendors will be informational, educational, and it will also be fun! Here are some of the things we have planned for you in the Exhibit Hall. We are required to provide guaranteed counts prior to arriving at the hotel and it is not always possible to increase those counts on-site. Please think about your social events and sign up for them by May 15th.

Raffle Prizes

Prizes will be raffled at different times throughout the Conference. Attendees registered for the conference will be given raffle tickets, and there will be marked containers placed randomly throughout the Exhibit Hall—one for each prize. Attendees may put as many of their tickets as they'd like in each marked container. Raffle tickets will be drawn in the Exhibit Hall on Monday during lunch and the President's Reception and on Tuesday during lunch and the Beer & Pretzels Reception. You must be present to win. Exhibitor representatives are not eligible for these drawings.



New and Improved - Exhibit Hall Scavenger Hunt

The PWEA Exhibits & Sponsors Committee is organizing an interactive Exhibit Hall Scavenger Hunt on Monday and Tuesday of the Conference.

How it Works:

Participation is free for Conference attendees, by registering and downloading the Scavenger Hunt App to their smartphone/tablet. The App identifies the participating Vendor booths and clues. Attendees will visit each participating booth to answer a question or to learn a specific fact about the Vendor or one of its products. Prizes will be awarded to the winning participants with the Grand Prize being an Apple iPad.

(Participants will use the Mobile Application, Scavify, an App designed for iPhones and Android devices that allows users to participate in interactive scavenger hunts using their mobile device.)



President's Reception Monday, 4:30-5:30pm

Be sure to attend the President's Reception! Enjoy complimentary beer & snacks while you network with your colleagues and the vendors.

There is no charge for this event.
Dress is casual.



PWEA Annual Dinner & Awards Ceremony Monday, 6:00-9:00pm

The Annual Awards Ceremony honoring your colleagues who have won prestigious state and national awards will take place during the pre-dinner cocktail hour, followed by dinner.

Tickets for those who register for the Full Conference are at the discounted fee of \$25.

Includes dinner and two drink tickets.

Guests, daily registrants, and those with other types of registrations may purchase tickets to attend. Tickets are \$70 per person. Pre-registration is required. On-site registration is not available for this event.
Dress is business casual.



Beer & Pretzels Reception Tuesday, 4:30-5:30pm

We will be serving complimentary beer, root beer, and soft pretzels! Come to the Hall to relax and visit with the vendors.

There is no charge for this event.
Dress is casual.



"Are You Smarter Than a Young Professional?" Trivia Challenge Tuesday, 6:00-9:00pm

The Challenge, hosted by the PWEA Students & Young Professionals Committee, is not just for YPs—Seasoned Professionals are encouraged to attend this wastewater-themed trivia competition. Play on your own or on a team. Compete against other players for prizes and bragging rights. Beat your boss! Beat your engineer! Beat the YPs! Or just come for food and drinks and watch the game.

Cost is \$45 per person, which includes two drink tickets and a buffet meal. A limited number of tickets will be available on-site.
Dress is casual.



Consent for Use of Photographic Images

Registration and attendance at, or participation in, the PWEA Annual Technical Conference & Exhibition and related activities constitutes an agreement by the registrant to permit PWEA's use and distribution (both now and in the future) of his/her image in photographs, promotional materials, electronic reproductions, etc., of these events and activities.

2016 CONFERENCE REGISTRATION FORM

PLEASE PRINT

Registrant Name: _____ Nickname (for badge): _____
 Organization: _____
 Mailing Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ Fax: _____
 Email Address: _____
 PWEA Member #: _____ PA DEP Client #: _____ PE License #: _____

☐ Check here if you are a Young Professional.
 (Age 35 or younger; Driver's License ID required.)

☐ **College Students** – Registration fee is waived for full-time college students if this form is submitted with a photocopy of current student identification. Social events are not included.

CONFERENCE REGISTRATION (Check appropriate fee.)

Includes continental breakfast, lunch, receptions and access to the Exhibit Hall

	By March 31	April 1-May 15	On-Site
Full Conference			
PWEA Member	<input type="checkbox"/> \$425	<input type="checkbox"/> \$475	<input type="checkbox"/> \$510
Non-Member	<input type="checkbox"/> \$505	<input type="checkbox"/> \$555	<input type="checkbox"/> \$590

	By March 31	April 1-May 15	On-Site
Monday Only			
PWEA Member	<input type="checkbox"/> \$240	<input type="checkbox"/> \$290	<input type="checkbox"/> \$325
Non-Member	<input type="checkbox"/> \$300	<input type="checkbox"/> \$350	<input type="checkbox"/> \$385

	By March 31	April 1-May 15	On-Site
Tuesday Only			
PWEA Member	<input type="checkbox"/> \$240	<input type="checkbox"/> \$290	<input type="checkbox"/> \$325
Non-Member	<input type="checkbox"/> \$300	<input type="checkbox"/> \$350	<input type="checkbox"/> \$385

	By March 31	April 1-May 15	On-Site
Wednesday Only			
PWEA Member	<input type="checkbox"/> \$85	<input type="checkbox"/> \$100	<input type="checkbox"/> \$115
Non-Member	<input type="checkbox"/> \$100	<input type="checkbox"/> \$115	<input type="checkbox"/> \$130

Monday Only Student & Young Professional (SYP) Registration

SYP Member	<input type="checkbox"/> \$150	<input type="checkbox"/> \$200	<input type="checkbox"/> \$235
SYP Non-Member	<input type="checkbox"/> \$200	<input type="checkbox"/> \$250	<input type="checkbox"/> \$285

Complimentary with SYP Registration – check if you will attend:

☐ PWO Plant Tour

Tuesday Only Student & Young Professional (SYP) Registration

SYP Member	<input type="checkbox"/> \$150	<input type="checkbox"/> \$200	<input type="checkbox"/> \$235
SYP Non-Member	<input type="checkbox"/> \$200	<input type="checkbox"/> \$250	<input type="checkbox"/> \$285

Complimentary with SYP Registration – check if you will attend:

☐ Stormwater Bus Tour - **OR**

☐ "Are You Smarter Than a YP?" Challenge

Guest Registration – A Guest is a spouse, life partner, or dependent who **is not in the water or wastewater industry**. One guest may register at no charge with each paid FULL Conference Registration. Ticketed Events are not included.

Guest Name: _____

NETWORKING EVENTS

Complimentary Events – please indicate whether you will attend

Monday - President's Reception	__ yes	__ no
Tuesday - Beer & Pretzels Reception	__ yes	__ no

Ticketed Events – please indicate quantity of tickets and total.

	Quantity	Cost	Total Due
Sunday			
Golf Tournament	___	\$ 90 per person	\$ ___
Foursome discount *	___	\$340 per foursome	\$ ___
* To qualify for the foursome discount, full payment must accompany this form. Provide names, if known.			
1. _____	3. _____		
2. _____	4. _____		

Monday

PWO Plant Tour	___	\$10 per person	\$ ___
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Annual Dinner	___	\$25 per person	\$ ___
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(This Dinner fee is for those who purchase a Full Conference Registration; includes 2 drink tickets.)

Annual Dinner	___	\$70 per person	\$ ___
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(This Dinner fee is for anyone who does not qualify for a discounted ticket and for guests; includes 2 drink tickets.)

Tuesday

Stormwater Bus Tour	___	\$20 per person	\$ ___
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"Are You Smarter Than a YP?"	___	\$45 per person	\$ ___
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Trivia Challenge
 (Includes buffet & 2 drink tickets.)

Method of Payment

To qualify for the early registration discount, payment must be postmarked by March 31st.

☐ Check (payable to PWEA)

☐ MasterCard

☐ Visa

☐ American Express

Card Number: _____ Expiration Date: _____ Security Code: _____

Name (as it appears on card): _____ Signature: _____

Billing Address (if different from above): _____

Total Registration Fees: \$ _____

Total Ticketed Events Fees: \$ _____

Total Due: \$ _____

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 Fax: 570-549-2221 • Phone: 570-549-2204
 Email: cindyrock@pwea.org

Penn Stater Conference Center Hotel • State College, PA



SAVE THE DATE

June 5-8 2016

Why Your Employer Should Invest in You Attending PennTec 2016

1. Continuing Education Credit – earn up to **19.5** DEP contact hours for operator licenses; or up to **23** Professional Development Hours for professional engineer licenses
2. Find Solutions to Current Problems – regulatory issues, equipment issues, management issues, customer service issues, process issues, etc.
3. Find Ways to Do More with What Your Organization Already Has
4. Discover New & Innovative Technologies to Take Your Organization Into the Future
5. Powerful Networking Opportunities – talk with people who can save your organization money
6. Cross-Training Opportunities for Others While You Attend PennTec
7. You Can Return and Share the Information Gained from Attending PennTec



For more information, go to www.pwea.org