IWPC 2020

TOGETHER FOR CLEAN WATER

April 20-22, 2020

Preliminary Conference Course Schedule

As of 12-3-19

Conference Track Key:

(BIOS) = Biosolids Management
(ODOR) = Odor Control
(ELEC) = Electrical Safety & Control Security
(ENRG) = Energy
(COLL) = Collection Systems
(PRET) = Pretreatment
(SHED) = Watershed Management
(NRR) = Nutrient Removal and Reuse
(LAB) = Laboratory Operations
(LIQD) – Liquid / WW Treatment
(LIFT) = Leaders Innovation Forum Technology
(WET) = Wet Weather
(OPS) = Plant Operations

Monday, April 20

Monday 1:00 – 1:30 p.m.

(BIOS)
PFAS Perspectives: Evolving Regulatory Frameworks and Science for Biosolids
Lynne Moss, Black and Veatch
Perhaps no other topic in the biosolids sector has garnered the attention now focused on per and polyfluoroalkyl substances (PFAS). As research struggles to keep pace with mounting public concerns, a patchwork of regulatory frameworks is emerging to address those concerns – often without a scientific underpinning. This presentation highlights the rapidly evolving regulatory landscape for PFAS in biosolids, the ramifications of ongoing changes, and current efforts to provide a robust basis to assess regulatory needs.

(PRET)
Local Limits - Keys to Development, Reassessment, and Documentation
Nathan Davis, Crawford, Murphy, & Tilly, Inc.
The development and regular reevaluation of local limits is a criterial step in ensuring the effectiveness of the pretreatment program and the protection of the treatment plant and environment from harmful discharges. Care should be taken to develop realistic and enforceable limits based upon sound technical justification. This presentation will review the key steps in the process of assessing local limits and the creation of submittals for Region Five USEPA review. It will include a discussion of reference material and guidance developed by USEPA along with specific details unique to Illinois. It will also discuss common sources of information to help in completing the local limits evaluation, agency review questions that have been received on past evaluations, and lessons learned based upon past experience.

(LIQD)
Considerations for Primary Filtration for Intensification of Primary Treatment
Jennifer Loconsole, Black & Veatch
In recent years, cloth media filtration has emerged as an attractive alternative to traditional primary clarification. This presentation will provide an overview of the process and design considerations for installation of cloth media filters for primary treatment. Two case studies will be presented to discuss the specific drivers for primary filtration and the challenges encountered during design.

Monday 1:30 – 2:00 p.m.

(BIOS)

Occurrence and Analytics of Per- and Polyfluoroalkyl Substances (PFAS) in Municipal Wastewater Treatment Plants

Kyle Doudrick, Department of Civil & Environmental Engineering, University of Notre Dame

Per- and polyfluoroalkyl substances (PFAS) are persistent synthetic organic contaminants that are ubiquitous in the environment and pose an emerging threat to human and environmental health. Numerous PFAS have been detected in wastewater treatment plant (WWTP) influents, stemming from a variety of consumer and industrial sources. In general, conventional treatment processes are not able to effectively remove PFAS, but it is largely dependent on the PFAS properties and operating conditions. Further complications arise from analytical issues. Over 6,000 PFAS are listed in the EPA inventory, yet only a small fraction of these can be analyzed by routine mass spectroscopy. This means that most PFAS entering and leaving WWTPs are not measured. In this presentation, I will give an update on the current knowledge of PFAS occurrence in WWTPs. I will then introduce a unique method for quantifying total PFAS in solid, liquid, and gas phases of wastewater. Finally, I will discuss some of the critical questions and challenges to consider when thinking about the management of PFAS in WWTPs.

(PRET)

Building Relationships and Educating IUs in your Pretreatment Program

Nichole Schaeffer, PE, BCEE, Baxter & Woodman, Inc.

There are many points of contact with Industrial Users (IUs) during a year where there are opportunities to teach and reinforce all that is required of both the IU and the Control Authority in the industrial pretreatment program (IPP). Some opportunities are during annual site inspections and some are formal annual meetings with all of the IUs by the Control Authority. I will share useful IU-Control Authority relationship building strategies that I have personally completed and from other IPPs, and lists of items to consider for educating IUs on permit requirements and for insuring compliance with the IPP.

(LIQD)

SELECTIVE PRESSURES FOR SLUDGE GRANULATION - IMPACT ON AERATION BASIN AND SECONDARY CLARIFIER CONFIGURATION

Leon Downing, Black & Veatch

Aerobic sludge granulation is being applied in new tanks specifically design for granulation, but the selective pressures for granule selection can also be achieved in flow through activated sludge configurations. A review of sludge granulation characteristics and impact to overall secondary treatment process capacity and performance will be provided, along with case studies for achieving granulation. The underlying operational and infrastructure characteristics that promote not only well settling sludge but also sludge granulation will be discussed, and design and operational considerations provided.

Monday 2:30 – 3:00 p.m.

(BIOS)

Biochar Production from Biosolids

David W. Spelman, Bradley University Dep. of CEC

Each year hundreds of tons of biosolids are produced and processes at wastewater treatment facilities around the country. The economics of the operation and expected regulatory changes that would affect the disposal of these biosolids on land are drivers for wastewater treatment facilities to seek alternate treatment and disposal methods. The Greater Peoria Sanitary District (GPSD) in Peoria, Illinois has commissioned a study to evaluate the potential for conversion of biosolids to biochar. Preliminary results from our studies show that the process is feasible. Bench-scale are in progress and pilot-scale studies are planned to evaluate parameters and outputs from the biosolids-to-biochar conversion process. It is envisioned that the GPSD model has the potential to be successfully applied to other wastewater treatment plants across the globe to help them achieve their waste treatment goals based on a sustainable principles and practices by creating a useful byproduct (biochar) from waste (biosolids).

Monday 2:30 – 3:00 p.m. (Continued)

(PRET)

French Connection: Exploring Holistic Solutions for Maximizing BNR Performance

Tyson Schlect, HDR

Publically owned treatment works (POTWs) have the opportunity to leverage recent shifts in the regulatory climate toward water federalism, integrated planning, and water quality trading. Pretreatment local limits and collection system inputs drastically affect biological nutrient removal (BNR) performance at municipal wastewater treatment facilities, and these recent shifts in the regulatory climate promote innovative approaches for managing those inputs, helping POTWs to stabilize their BNR processes. A renewed emphasis on states' involvement in Clean Water Act regulation has stimulated recent efforts to work out innovative watershed nutrient management strategies. Water quality trading has been documented by EPA since the early 1990's, but recent emphasis has led to consideration of pretreatment trading in the context of nutrient management at the POTW. Integrated planning is a final piece of the puzzle, having recently been added to federal law as an amendment to the Clean Water Act.

(ODOR)

A Drive Down Odor Lane

Hanting Wang, PE, Greeley and Hansen

Utilities managing and operating Water Reclamation Facilities (WRF) are working to address odor issues from a holistic standpoint. At a WRF, there are a multitude of potential odor sources that range from inorganic gases such as hydrogen sulfide and ammonia, to organic compounds such as mercaptans and amines, with some odors being more prevalent in different processes. This presentation will discuss the range of origin points and odors that are present within the collection system (i.e. force mains, gravity lines, and lift stations) and within the fence line of a WRF, along with various odor control technology options. With any technology, the ultimate goal is to combine the odors with the optimal treatment to achieve the right strategy for the right situations. Throughout this presentation, we will share lessons learned and case studies, while developing concepts and talking points for utilities to address odor issues.

Monday 3:00 – 3:30 p.m.

(BIOS)

Biosolids Planning from an End Use Perspective

Natalie Sierra, Brown and Caldwell

As facilities age, many utilities are beginning to re-examine their solids treatment train and biosolids end use program. Often, the ultimate destination of the resulting biosolids is resolved towards the end of the planning process, when technology selection and capital planning is already locked in place. By beginning with an end product and its associated markets, utilities can set project drivers that tie together end use and desired outcomes such as lower program costs, lower energy use, and public acceptance. This paper will present three case studies of utilities that conducted master plans with an end use analysis element, currently planned to be the Metropolitan Sewer District of Greater Cincinnati, San Francisco Public Utilities Commission and City of San Jose. Due to each utility's unique drivers, including available end use markets, different solids handling upgrades were selected for each.

(PRET)

Investigation into Per- and Polyfluoroalkyl Substances Action Plan

Amjad Kawash, Metropolitan Water Reclamation of Greater Chicago.

Abstract, TBD

Monday 3:00 – 3:30 p.m. (Continued)

(ODOR)

Reducing Odor Complaints through Air Dispersion Modeling and Odor Control Master Planning

Amy West, Brown and Caldwell

This presentation will dive into the process odor dispersion modeling and how citizens, city officials, and wastewater treatment (WWT) operators can come together to address odors affecting their communities. The case study discusses an odor dispersion project completed by Brown and Caldwell (BC) for the Metropolitan Sewer District of Greater Cincinnati (MSDGC). BC performed a plant-wide odor evaluation for the Mill Creek WWTP using an odor dispersion model which analyzes odor sources at the plant and predicts the strength of the odors as they migrate to surrounding communities. This type of odor evaluation allows odorous sources to be prioritized for remediation and capital improvement planning. Other benefits of odor dispersion modeling which will be discussed include complete odor profiling, odor control performance evaluations, and visual representation of odor reduction efforts. Subject areas directly related this project include odors, public relations, program/capital planning, biosolids/solids/liquid treatment, and plant operations.

Monday 3:30 – 4:00 p.m.

(BIOS)

Nutrient and Energy Reduction with Low Dissolved Oxygen Operations

Don Esping, Brown and Caldwell

Efficient nitrogen and phosphorus removal under low DO conditions has been accomplished through simultaneous nitrification-denitrification (SND) and nitritation-denitritation more commonly known as “nitrite shunt”. This paper presents two case studies in which different low DO control strategies were implemented for nutrient reduction and energy savings. Case study 1 presents a modified SND approach using DO control which has shown to reduce TN discharges below 10 mg N/L while producing excellent sludge quality. Case Study 2 presents nutrient and energy reduction using a highly automated ammonia based aeration control strategy with hydrocyclones for sludge densification to maintain sludge quality.

(PRET)

Brushing up on the Water Reclamation District's Dental Amalgam Program

Phillip Keeku, Metropolitan Water Reclamation of Greater Chicago

Abstract, TBD

(ODOR)

Operations & Maintenance Considerations for Chemical, Biological and Activated Carbon Odor Control Systems

Sean Trainor, Evoqua Water Technologies

The choice between chemical, biological and activated carbon odor control systems for municipal sewage treatment processes is largely a financial one. All three technologies can be effective, but the capital and operating costs can vary widely depending on the volume of air and concentration of odors being treated. O&M considerations also play an important role in appropriate technology selection.

Tuesday, April 21

Tuesday 9:00 a.m. – 10:00 a.m.

(SHED)
Illinois Water Quality Standards Update
Scott Twait, IEPA

Tuesday 9:30 a.m. – 10:00 a.m.

(LIFT)
Pushing Process Intensification Limits for Biological Nitrogen Removal using Gel Entrapment Technology
Mehran Andalib, Stantec
This paper focuses on the application of bio-gel carriers encapsulated technology called PEGASUS by Hitachi, Japan for biological nitrogen removal within a very intensified process, already implemented in more than 25 plants. This technology is classified into an integrated fixed activated sludge (IFAS) with many advantages such as ease of operation, and robustness to fluctuations in influent and process operations. In addition, this technology can apply and upgrade from the existing conventional activated sludge (CAS) process to advanced wastewater treatment system with no expansion of their footprint as the bio-gel carrier's high nitrification performance. The results of this continuous bench scale test, conducted at the Johns Hopkins University (JHU) / Stantec alliance laboratory, shed light on the potentials of this specific application for process intensification in general, and intensified nitrification and other bio-gel carrier's processes by using this technology such as anammox and denitrification.

Tuesday 10:30 a.m. – 11:00 a.m.

(SHED)
Nonpoint Source Program Update
Chris Davis, IEPA

(LIFT)
Real-time fecal coliform monitoring and other applications of RS Hydro Proteus multiprobe technology
Svetlana Taylor, Current Water
Abstract, TBD

(ELEC)
Yorkville-Bristol Sanitary District Electrical Safety Program and Arc Flash Study
Warda Shafi, Greeley and Hansen
Abstract, TBD

Tuesday 11:00 a.m. – 11:30 a.m.

(SHED)
Illinois TMDL Program Update
Abel Haile, IEPA

Tuesday 11:00 a.m. – 11:30 a.m. (Continued)

(LIFT)
Putting Utility Innovation into Practice
Joanna Brunner, Arcadis
While over 90% of water and wastewater utilities believe that innovation is critical to their future, less than 50% believe their organizations have changed because of innovation. To close that gap, the Water Research Foundation Fostering Innovation within Water Utilities project and Leading Water and Wastewater Utility Innovation project have developed resources through a global collaboration of over 70 utilities to help utilities launch and sustain innovation programs that can transform their organizations, improve their services and increase value delivered to stakeholders. This session will provide utilities an overview of these resources including the Utility Innovation Framework. Additionally, Metropolitan Water Reclamation District of Greater Chicago will provide a utility perspective on putting the Framework and innovation management into practice. All in all, participants will leave better equipped to develop and sustain more agile organizations ready to adopt new ideas.

(ELEC)
Practical Benefits for Automation and Safety Monitoring for Treatment Plants
Thomas Powell, Greeley and Hansen
Water and Wastewater treatment plants may include many types of monitoring and control systems for automation and equipment monitoring. Some automated systems can make operation easier for people, while others do not. This presentation will discuss systems and how they impact operations, convenience, and safety within treatment facilities.

Tuesday 11:30 a.m. – 12:00 p.m.

(SHED)
Statewide Active Watershed Groups Update
Dan Boudreau, GZA and & Beth Baranski, League of Women Voters of Jo Daviess County l

(LIFT)
Sidestream Enhanced Biological Phosphorus Removal: Updates from WRF project 4975 on the next evolution of phosphorus removal
Leon Downing, Black & Veatch
A new Water Research Foundation (WRF) project was started in 2019 with the goal of developing design guidelines, operational tools, and best modeling practices for biological phosphorus removal configurations that implement sidestream enhanced biological phosphorus removal (S2EBPR) configurations. These configurations implement sidestream reactors to select for phosphorus removal. The presentation will present an update of the research project, which focuses on full scale results from 19 facilities internationally.

(ELEC)
Practical Steps to Improve Your SCADA Cybersecurity Today
Joe Hurley, Woodard & Curran
Developing a robust SCADA cybersecurity program is the best way utilities can protect their system from the immense amount of threats that exist today. However, utilities should not allow the process of creating a perfect cybersecurity approach stand in the way of making small improvements to their system immediately. This presentation will focus on the cost-effective steps that utilities can take today to improve the security stance of their SCADA system.

Tuesday 1:00 p.m. – 1:30 p.m.

(NRR)

Rapid Start-Up of an ANITA Mox Deammonification System Downstream of Phosphorus Recovery and Anaerobic Digesters

Mitch Johnson, Veolia Water

Howard County's Little Patuxent WWTP, located in Savage, MD, installed the ANITA Mox sidestream deammonification process in 2018. Howard County was interested in sidestream deammonification as a means to treat the increased centrate ammonia load from the new anaerobic digestion complex without expanding the existing, mainstream BNR process. The startup occurred in conjunction with two new mesophilic digesters and an upstream phosphorus recovery system. An equalization tank upstream of the ANITA Mox provides enough volume to independently stabilize flow from the plants dewatering schedule. The installation also includes equipment for caustic addition and a heating loop for both reactors. The system was seeded on January 15th, 2019 (8% of total media was seeded media) and reached design flow on March 5th, 2019 (44 days later). The rapid start-up was successful and unaffected by operational issues, such as instances of high solids concentration (>2,000 mg/L TSS).

(WET)

Coping with Future Rain Events - City of Madison WI Multi-Faceted Approach

Jim Bachhuber, Brown and Caldwell

Madison, Wisconsin sits on a narrow isthmus between two lakes. Managing lake levels is critical for multiple goals including recreation, water quality, and flood control. An August 20 - 21, 2018 rain dumped 10.5 inches of rain into the lake's watershed over a twelve-hour period and triggered unprecedented flooding. For reference, NOAAs Atlas 14 lists the Madison area 1,000 year; 12-hour duration rain event at 8.92 inches. The August event was literally off the charts. This presentation will explore: 1) the physical and hydrologic connection between the lakes and City, 2) the historic rain event of August 2018, 3) the City's immediate responses to the August rain event, and 4) the City's ongoing efforts to inform citizens, predict impacts, and mitigate damage. Attendees of the presentation will learn how Madison's approach balances the multiple interests in lake level management with the growing need for flood control from future rain events.

(SHED)

Illinois EPA Permits Section Update

Amy Dragovich, Illinois EPA

Tuesday 1:30 p.m. – 2:00 p.m.

(NRR)

Sidestream Enhanced Biological Phosphorus Removal with Low Carbon Wastewater in a Pilot Scale Sequencing Batch Reactor

Dongqi Qin, Metropolitan Water Reclamation District of Greater Chicago

The District is exploring return activated sludge (RAS) sidestream fermentation to augment convention EBPR, also referred to as sidestream EBPR (S2EBPR). It was reported that S2EBPR may minimize the need for influent carbon, i.e. lowering the required BOD: TP ratio to achieve sustainable EBPR. The District designed and constructed a 50-gallon sequencing batch reactor (SBR) with a 20-gallon RAS fermenter at Calumet WRP to test the S2EBPR configuration. The SBR is then fed with Calumet primary effluent (BOD: TP ~ 18) with a portion of the fermented RAS.

Tuesday 1:30 p.m. – 2:00 p.m. (Continued)

(WET)
Combining SBR with Biological High-Rate Clarifier during Wet Weather Events
Jeff Miller, Veolia
The City of McHenry, IL recently installed a Biological High-Rate Clarifier system to treat wet weather flows up to 10 MGD for BOD and TSS removal. The plant also installed an SBR system to treat everyday flow. The design was set up so that one of the SBR basins would automatically become the biological contact tank for the Biological High-Rate Clarifier during a wet weather, high-flow event. By having fresh process water in the largest basin in the system, the start-up time of the Clarifier is reduced by roughly 75% during a rain event.

(SHED)
Stream Assessment Techniques
Cindy Skrukurd, Sierra Club; Mary Beth Falsey, DuPage County Stormwater; Tyler Carpenter, Greater Egypt Planning Commission

Tuesday 2:30 p.m. – 3:00 p.m.

(ENRG)
Best Practices for Cogeneration System Operation
Nancy E. Andrews, Brown and Caldwell
As more and more water resource recovery facilities (WRRFs) design and operate new biogas utilization systems it becomes crucial to share the best operating practices for the cogeneration and gas treatment systems. The intent of implementing best operating practices is to (1) maximize the electrical and natural gas energy cost savings via increased engine output per unit of gas and engine uptime, (2) minimize operations and maintenance expenses that erode net energy cost savings, and (3) reduce biogas flaring.

(NRR)
SUSTAINABLE NUTRIENT RECOVERY WHILE MEETING WATER QUALITY BASED EFFLUENT LIMITS
Ed Coggin, P.E., Weston Solutions
This presentation discusses how one Wisconsin community, the Village of Roberts, is implementing a system to meet a WQBEL total phosphorus limit of 0.04 milligrams per liter (mg/L), one of the lowest discharge limits in the U.S. Weston collaborated with the Village of Roberts in turning the problem into the solution. Controlled algae growth is used in the upgraded wastewater treatment process to remove nutrients before discharging the treated water. The controlled algae growth is accomplished in a tertiary treatment system that was added to the existing sequencing batch reactor (SBR) secondary treatment plant. The advanced biological nutrient recovery (ABNR) system from Clearas includes photo-bioreactors (PBRs) in a greenhouse, followed by membrane separation. Excess algae is harvested and will be sold for bioplastics production, generating a revenue stream for the community.

(SHED)
Nutrient Assessment Reduction Plan (NARP) and Nutrient Loss Reduction Strategy (NLRS) Update
Presenter(s), TBD

Tuesday 3:00 p.m. – 3:30 p.m.

(ENRG)

Impact of Energy Efficiency Measures on Wastewater Treatment Plant Operations and Budgets

Shawn Maurer, Smart Energy Design Assistance Center (SEDAC)

Reducing energy use can significantly impact local governments' annual operating budgets, especially for local governments that own and operate wastewater treatment facilities. Energy efficiency improvements can save energy and money, as well as provide other economic and environmental benefits for local governments. This session will focus on ways to overcome implementation barriers, featuring Illinois wastewater facilities who have implemented energy-saving opportunities based on assessments performed by the Illinois EPA's Wastewater Treatment Plant Assessment Program. Trends in energy use across wastewater facilities, as well as common energy-savings measures will be highlighted. Available technical support and funding opportunities across Illinois will be featured to help facilities achieve energy reduction and cost-savings.

(NRR)

Implementing BPR Using Existing Infrastructure for the Village of Cary, Illinois

Michael Ott, P.E., Strand Associates, Inc.

The Village of Cary received a new NPDES permit for its WWTP which included a new 1.0 mg/L TP Limit which is set to take effect in June of 2020. Additionally, their permit includes a future TP effluent limit of 0.5 mg/L by 2030. The Village hired Strand to design upgrades at its WWTP which incorporated a new biological phosphorus removal (BPR) process within its existing infrastructure. Construction of the BPR process was completed in the summer of 2018. This presentation details the BPR startup and troubleshooting process. Several operational changes were required in order to achieve and optimize the BPR system. Ultimately the operators were able to achieve BPR and have been able to consistently achieve effluent TP concentrations well below their new 1.0 mg/L effluent limit and have multiple weeks below their future 0.5 mg/L TP limit without the use of chemical precipitants.

(SHED)

NARP Panel Discussion

Cindy Skrukurd, Sierra Club; Amy Dragovich (TBD), Illinois EPA; Angela Chase (TBD), Rantoul, and others

Tuesday 3:30 p.m. – 4:00 p.m.

(ENRG)

Optimizing Aerobic Digestion Process and Energy Use by De-Coupling Aeration from Mixing

Tyler Kunz, EnviroMix, Inc.

The City of Benton, IL, a 1.65 MGD facility, is utilizing a system of decoupled aeration and mixing in its aerobic digesters to realize energy savings of over 60% versus the traditional method of aeration alone. The energy-efficient mixing approach referred to as compressed gas mixing utilizes large bubbles created from short bursts of compressed air released through nozzles mounted to the basin floor. When used in conjunction with a right-sized diffused aeration system, Benton, IL realizes significant benefits including process improvements, energy savings, and automated operation through instrumentation feedback.

(NRR)

Startup and Troubleshooting of a 42 MGD Biological Phosphorus Removal Process

Mark Halm, P.E. BCEE, Deuchler Engineering Corporation

The presentation will address waste characterization for design, flexibility of process design, monitoring and control. Data will be presented including typical design rule-of-thumb ratios for successful treatment versus actual performance.

(SHED)

Watershed Management Open Forum (Q&A)

Wednesday, April 22

Wednesday 9:00 a.m. – 9:30 a.m.

(LAB)
Emerging Contaminants - PFAS and PFOS
Scott Siders, PDC Laboratories
Abstract, TBD

(OPS)
Maximizing Operational Flexibility for Nutrient Removal with an Oxidation Ditch
Mike Furst, Ovivo
The use of oxidation ditch technology for the treatment of municipal wastewater has been around for decades. Paraphrasing a 1970â€™s vintage wastewater engineering textbook, an oxidation ditch is an extended air activated sludge treatment plant designed for small communities in Europe, typically with 3 feet of water.

Wednesday 9:30 a.m. – 10:00 a.m.

(LAB)
Total Kjeldahl Nitrogen Colorimetric Testing for Discrete and Segmented Flow Analyzers
Sarah McFaul, SEAL Analytical
Total Kjeldahl Nitrogen is currently tested in many working laboratories, however, the procedure can vary from one lab to another. There are several options available for this colorimetric test. We will discuss differences in the digestion procedure, including choosing mercury or a copper catalyst, type of boiling granules, and consistency in reconstitution. We will also discuss troubleshooting issues associated with the colorimetric reaction after digestion. The topics to be discussed will be pH of the reaction, matrix matching, reaction interferences, and chemical contamination.

(OPS)
Maximizing Operational Flexibility for Nutrient Removal with an Oxidation Ditch
Matthew A. Johnson, Fehr Graham
Monticello chose an oxidation ditch system. To maximize the operational flexibility, an anaerobic selector will be built upstream of the oxidation ditches. The anaerobic selector will allow the system to run in multiple modes of biological nutrient removal.

Wednesday 10:30 a.m. – 11:00 a.m.

(LAB)
Regulated Laboratory Testing
Cora Fickinger, Teklab, Inc.
Regulated Laboratory Testing Session will take a historical walk through the Clean Water Act method updates. Instruction will be given on reading and following 40 CFR 136 for wastewater sampling and analysis. Typical wastewater plant lab testing methods will be used as examples including Electrode, Gravimetric, and Colorimetric methods (pH, Total Suspended Solids, BOD, DO, COD, etc.)

Wednesday 10:30 a.m. – 11:00 a.m. (Continued)

(OPS)

Are You Actually Using Your Data? Going from Collection to Action to Solve Real-World Problems

Susan Guswa, Woodard & Curran

Utilities collect a vast amount of data about their operations, but many are not applying that data to solve real-world problems. In order to make the transition from collecting data to using it effectively, utilities need to understand what data they have and how to analyze it to gain useful insights. This presentation will use real-world examples to show attendees how to make the most of the data they already collect.

Wednesday 11:00 a.m. – 11:30 a.m.

(LAB)

This is just a place-holder for a speaker for the lab session. The lab committee is working on soliciting speakers.

Lab Presenter 4, TBD

Abstract, TBD

(OPS)

Model-based controls is the Missing Link to getting the most from your BNR plant

Randy Chann, Environmental Dynamics International

Conventional control solutions have failed to meet the rigorous aeration and biological process operating requirements of a BNR plant. Whereas, model-based controls provide seamless automation. Gain first hand information on how control systems function, and why model-based solutions is the paradigm shift needed to get the most from the plant.

Wednesday 11:30 a.m. – 12:00 p.m.

(LAB)

Sampling for Storm Water Compliance

Joelie Zak, Scientific Control Labs

Sampling for storm water compliance can be complicated, hectic and sometimes dangerous! This paper will discuss the basics of storm water sampling and analysis for compliance purposes including proper sample preservation methods, safety and filling out all of that paperwork!

(OPS)

Process modeling for water resource recovery facilities (WRRFs): Benefits of a priori data analysis

Brian Shoener, Black & Veatch

As more water and wastewater treatment plants utilize internet-enabled tools capable of performing real-time measurements, the availability of data for process design is increasing exponentially. Effectively managing this wealth of data can prove cumbersome at best if care is not taken to organize, analyze, and clean data as they are gathered. Moreover, neglecting to assess data quality before utilization in process models can result in overlooked outliers, shifts, and drifts in the data. As such, analyzing collected data prior to its use in a simulation can both reveal unforeseen events that may have occurred at a facility as well as enable greater confidence in model outputs. Three key examples of a priori data analysis will be presented: (i) chemical oxygen demand (COD) fractionation impacts on mass balances, (ii) COD fractionation impacts on predicting BNR performance, and (iii) large data set quality impacts on dynamic simulations.

Wednesday 1:30 p.m. – 2:00 p.m.

(COLL)

You Down with CIPP? Yeah, You Know Me!

Ryan Klachko, RJN Group

This presentation will answer 3 questions; why are we lining a lateral? How do we line a private lateral? Lastly, what are the current methods for CIPP lining? The main goal of this interactive presentation is to demonstrate to the audience a high-level overview of the current state of lateral lining and how it will affect a sanitary sewer system. This presentation will focus on utilizing collected videos, pictures, and interactive polls.

Part I: Why do we line a lateral? What are other options: bursting, slip lining, dig and replace

Part II: Lining just the connection vs. lining from the connection to the house (how to line from the main sewer to the home)

Part III: Current methods being utilized in the CIPP market

High level summary of public and private funding sources used to fund specific WTP and WWTP improvements projects. Discussion to include: Traditional External public funding programs, and Non-Traditional Public and/or private + public funding programs. Specific Shive-Hattery WTP & WWTP Project Case Studies with Funding Lessons Learned will be covered including a summary of Advantages and Disadvantages for each of the funding sources.

(OPS)

Plain Shoe Bug Talk

Don Bixby, Chamlin & Associates, Inc.

With much of wastewater treatment, it simply assumed we all understand the various terms and processes we work with every day. This presentation is intended to address many of these assumptions but to do so in plain language that is hopefully easy to understand.

Wednesday 2:00 p.m. – 2:30 p.m.

(COLL)

Fighting the Good Fight - Lessons in Private Property I/I Reduction from Across the United States

Andy Lukas, Brown and Caldwell

Across America, nearly every municipality that has a sewer system and experiences rainfall has at some point considered whether it has too much infiltration and inflow (I/I) in its system. After considering this, nearly all ask the next logical question: 'Where is it coming from?' If they aren't considering the 50 percent of the system that exists on private property, they should be. This presentation will cover a wide perspective of lessons learned from a variety of municipal situations, small and large, that have tacked private property I/I with a variety of mechanisms and to varying degrees of success. What makes them go well? What makes them expensive? What makes them sustainable? These questions and more will be explored.

Wednesday 3:00 p.m. – 3:30 p.m.

(COLL)

Developing Solutions via Hydrologic and Hydraulic Modeling to Meet Regulatory Constraints and Long-Term Goals

Ted R. Bluver, Greeley and Hansen, LLC

With the multitude of factors affecting flow in collection systems, developing solutions to satisfy regulatory constraints with a satisfactory degree of confidence is challenging. Certain approaches may be more efficient and effective than others for a particular application. A review of two case studies will demonstrate that there are different ways to evaluate CSO LTCP solutions via hydrologic and hydraulic modeling based on the level of a project's definition and scale. These case studies include the Passaic Valley Sewerage Commission, which serves 48 municipalities with 1.5 million people in Northeast New Jersey, and the Pennsylvania-American Water Company, which serves the City of Scranton with 80,000 people. The thoughtful approaches presented in these two case studies are useful to municipalities and engineers as they demonstrate different ways to tailor evaluations to suit the project scale and level of definition and satisfy long-term control plan and consent decree objectives.

(OPS)

ABCs of BNR: An Introduction and Evolution of Biological Nutrient Removal; From A2/O to Modified Bardenpho to an Improved Biological Phosphorus Removal

Brian Mitchell, WesTech

An Introduction to Biological Nutrient Removal (BNR). The presentation will give an overview of the history of BNR, the evolution of BOD removal, nitrogen removal and finally phosphorous removal. It will go through some of the chemical reactions that make BNR processes possible. It will also discuss how tight limits are achieved biologically for both nitrogen and phosphorous (EPBR).

Wednesday 3:30 p.m. – 4:00 p.m.

(COLL)

Transitioning from Visual Inspection to Fact-Based Data with Tech Eyes on the Collection System

Jay Boyd, ADS Environmental Services

The City of San Diego believed that the cleaning frequency rate at many collection system sites was too high and could be safely reduced but they lacked data. Consequently, they decided to put 'eyes on their system', deploying monitoring technology to determine cleaning frequency. Site cleaning frequency decisions were based on subjective field assessment and error increases with less experienced staff.

(OPS)

Starting Up, The Sequel: Lessons Learned from the Startup of the new Westside Aerated Grit Facility and Primary Settling Tanks at the Stickney Water Reclamation Plant

Ryan Christopher, Greeley and Hansen

The Metropolitan Water Reclamation District of Greater Chicago has recently completed the construction of a new Aerated Grit Facility and Primary Settling Tanks at the Westside of the Stickney Water Reclamation Plant. The new grit and primary settling facility replaced the ninety year old Skimming and Imhoff Tanks. The new facility is capable of treating 720 million gallons per day of flow. This presentation will discuss the lessons learned from the startup of the new facility, including grit handling and removal, and primary sludge and scum removal. The presentation will also discuss the performance of the new facility.

Wednesday 4:00 p.m. – 4:30 p.m.

(COLL)

Using Next Century Tech to Solve Last Century Collections Problems

Lindsay Birt, Ph.D., Xylem

Prior to 2008, the sewers in South Bend would overflow into the Saint Joseph River virtually every time it rained â€" overflows of some 1-2 billion gallons or more annually. The City typically reported 25-30 dry weather overflows each year as well. In 2011, South Bend entered into a consent decree with EPA Region 5 and the U.S. Department of Justice, agreeing to a long-term control plan today at $860 million in total, with approximately $730 million remaining to be spent. Since 2012, the now 152 monitoring sites and 13 automated gates and valves have eliminated dry weather overflows and reduced combined sewer overflow (CSO) into the Saint Joseph River by more than 70 percent. Since implementing its Smart Sewer program, the City has enjoyed approximately $1.5 million in annual operating and maintenance benefits. By optimizing the system, the City has saved approximately $500 million in capital work.

(OPS)

Prolonging the life of infrastructure through coating maintenance

Richard Leber, Robinson Engineering Ltd.

Corrosion causes approximately 276 billion dollars' worth of damage to infrastructure in the United States annually. Approximately 13% or 36 billion dollars is damage to water and wastewater systems in the United States. It is estimated that 15 to 35% of that amount could be saved by using current corrosion management practices. The goal of this presentation is to help facility managers and operators of water and wastewater systems to understand the corrosion process, identify areas of their facilities that are prone to the development of corrosion, how to conduct a corrosion evaluation of their facilities, and understand processes for corrosion mitigation. By using the information presented, facility personnel will be able to protect and maintain their system assets from the damaging effects of corrosion, saving money and prolonging the life of their infrastructure.