2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: How to Cast a Cover in 563 Easy Steps

Presenter: Sue Barmon **Job Title:** Regional Sales Manager

Employer: Olympic Foundry

Phone #: 5039757601 **Email:** sue.b@olympicfoundry.com

Summary of Lesson Content: A slide show providing a visual walk through of the foundry and the casting process. Will touch on specifications and load ratings and how they apply to your project.

CEU Relevancy: Understanding how a cast manhole or valve box is made can simplify the ordering and installation process. Knowledge of specifications and ratings can aid in choosing the proper casting for the application.

Professional Background: 17 Years in Sales/Sales Mgmt with Olympic Foundry. Previous 18 years in Metals Distribution.

Primary Knowledge/Skills/Abilities Related to Presentation: 35+ years in Metals Related fields

Education: Scripps College, BA in Economics

Professional Registration/Certification:

Related Papers/Instruction Given:

Professional Organizations/Activities: AWWA, APWA, PNPCA

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Employee Engagement: Unlock the Secrets of Silent Defectors

Presenter: Jennifer Bouman-Steagall **Job Title:** Attorney

Employer: Red Kite Employment Law

Phone #: 5037044991 **Email:** Jennifer@redkiterising.com

Summary of Lesson Content: Suitable for contributors at all levels, this informative program explores the principles of employee engagement and its impact on team dynamic, as well as the hidden reasons behind employee turnover, low morale, decreased production, and team unrest. Join us to learn how to recognize the signs of disengagement and suggestions for how to start turning things around.

CEU Relevancy: Turnover, staffing challenges, a lack of productivity and efficiency, and team unrest all have the power to compromise a culture of safety and the ability of the team to meet a community's needs. Understanding the employee engagement mindset provides an opportunity to motivate, encourage and empower employees to give their best efforts.

Professional Background: Management side employment law attorney with over 20 years' experience representing Pacific Northwest employers.

Primary Knowledge/Skills/Abilities Related to Presentation: Employment Law attorney specializing in employee engagement, organizational development, corporate culture change, and cohesive team dynamics and communication.

Education: J.D.

Professional Registration/Certification: Certified Everything DiSC Solutions Facilitator; Accredited Facilitator of 5 Cohesive Behaviors of a Team

Professional Organizations/Activities: SHRM; Professional Member of the National Speakers Association; Oregon State Bar; Washington State Bar

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Surviving the Rollercoaster of Change

Presenter: Jennifer Bouman-Steagall **Job Title:** Attorney

Employer: Red Kite Employment Law

Phone #: 5037044991 **Email:** Jennifer@redkiterising.com

Summary of Lesson Content: Change takes many forms, especially in the pandemic world. Everyone works through change differently. How change FEELS depends on how we move through it, and sometimes the “moving through it” is the hardest part. Through this engaging program, we explore the rollercoaster of emotions employees experience during change, and 10 effective strategies to survive it.

CEU Relevancy: Providing emotional support to employees during periods of change is critical to their well-being, their productivity, and their safety at work.

Professional Background: Management side employment law attorney with over 20 years' experience representing Pacific Northwest employers.

Primary Knowledge/Skills/Abilities Related to Presentation: Employment Law attorney specializing in employee engagement, organizational development, corporate culture change, and cohesive team dynamics and communication.

Education: J.D.

Professional Registration/Certification: Certified Everything DiSC Solutions Facilitator; Accredited Facilitator of 5 Cohesive Behaviors of a Team

Related Papers/Instruction Given:

Professional Organizations/Activities: SHRM; Professional Member of the National Speakers Association; Oregon State Bar; Washington State Bar

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Water Quality Improvement through Water Storage Tank Mixing

Presenter: Ethan Brooke **Job Title:** Regional Sales Manager/Senior Product Manager

Employer: UGSI Solutions **Phone #:** 14083706540 **Email:** grock@ugsicorp.com

Summary of Lesson Content: This 60-minute seminar will provide water system managers, operators and engineers a practical understanding of the science behind applying mixing energy to water in reservoirs or tanks as a means to improve water quality in distribution networks.

CEU Relevancy: Attendees will understand the role of tank mixing as a fundamental step to improving water network quality.

Attendees will understand the roles of various types of mixers in achieving a “well mixed” tank without excessive energy consumption.

Attendees will be able to understand the role of tank mixing as a first step to THM removal and active residual improvement or boosting.

Primary Knowledge/Skills/Abilities Related to Presentation: . Ethan has a background in civil engineering and product management and has worked on a variety of water, wastewater and distribution system infrastructure improvement projects.

Education: Hall-Dall Highschool class of 95. Antioch college, double major in Physics and Sculpture MS University of NH. Civil engineering 2009

Professional Registration/Certification: master’s thesis on THM aeration was published in the Journal American Water Works Association and resulted in three patents which are held by the University of New Hampshire.

Related Papers/Instruction Given:

Professional Organizations/Activities: Current chair of the CA-NV distribution system water quality committee

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Disinfectant Residual Control in Water Distribution Systems

Presenter: Ethan Brooke **Job Title:** Regional Sales Manager/Senior Product Mgr

Employer: UGSI Solutions **Phone #:** 14083706540 **Email:** grock@ugsicorp.com

Summary of Lesson Content: This 60-minute seminar will provide water system managers, operators and engineers a practical understanding of the conditions, chemistry and science behind affecting positive control of both chloramine and free-chlorine levels in water distribution systems. Importantly, the second half of the seminar will present a suite of proven technologies that can be employed to automatically control disinfectant residual levels in real world water distribution systems.

CEU Relevancy: Attendees will understand the conditions and basic chemistry of chloramine and free-chlorine residual destruction in water distribution systems. Attendees will understand how the breakpoint curve can be used to intelligently boost residual levels in an automated mode versus today's manual and time-consuming methods. Attendees will be able to understand the roles of various technology choices and form factors that can be specified and employed in water systems to stabilize and improve residual levels.

Primary Knowledge/Skills/Abilities Related to Presentation: Ethan has a background in civil engineering and product management and has worked on a variety of water, wastewater and distribution system infrastructure improvement projects.

Education: Hall-Dall Highschool class of 95. Antioch college, double major in Physics and Sculpture MS University of NH. Civil engineering 2009

Professional Registration/Certification: Master's thesis on THM aeration was published in the Journal American Water Works Association and resulted in three patents which are held by the University of New Hampshire.

Professional Organizations/Activities: Current chair of the CA-NV distribution system water quality committee

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: On-Site Sodium Hypochlorite Generation as a Safe and Efficient Alternative to Chlorine Gas or Commercial Strength Bulk Hypochlorite for Water Disinfection

Presenter: Ethan Brooke **Job Title:** Regional Sales Manager & Senior Product Mgr

Employer: UGSI Solutions **Phone #:** 14083706540 **Email:** grock@ugsicorp.com

Summary of Lesson Content: This 60-minute seminar will provide water system managers, operators and engineers a practical understanding of the science and implementation behind on-site sodium hypochlorite generation (OSHG) as a source of chlorine disinfection capacity for water and wastewater plants as well as distributed well systems.

CEU Relevancy: Attendees will understand the basics of on-site generation of hypochlorite as an option for water or wastewater disinfection versus gas chlorine or commercial strength bleach. Attendees will understand the roles of OSHG components as part of an overall OSHG system. Attendees will be able relate to many applications of OSHG in both large and small plants as well as in applications distant from plants in the well fields or distribution systems.

Primary Knowledge/Skills/Abilities Related to Presentation: Ethan has a background in civil engineering and product management and has worked on a variety of water, wastewater and distribution system infrastructure improvement projects.

Education: Hall-Dall Highschool class of 95. Antioch college, double major in Physics and Sculpture MS University of NH. Civil engineering 2009

Professional Registration/Certification: Master's thesis on THM aeration was published in the Journal American Water Works Association and resulted in three patents which are held by the University of New Hampshire.

Professional Organizations/Activities: Current chair of the CA-NV distribution system water quality committee

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: THM Mitigation in Water Distribution Systems through Water Storage Tank Mixing and Aeration

Presenter: Ethan Brooke **Job Title:** Regional Sales Manager & Senior Product Mgr

Employer: UGSI Solutions **Phone #:** 14083706540 **Email:** grock@ugsicorp.com

Summary of Lesson Content: This 60-minute seminar will provide water system managers, operators and engineers a practical understanding of the conditions, chemistry and science behind trihalomethane (THMs) generation in water distribution systems. Importantly, the second half of the seminar will present a suite of proven technologies that can be employed to reduce THM levels in real world water distribution systems.

CEU Relevancy: Attendees will understand the conditions that generate THMs in distribution systems and the physical/chemical nature of THMs. Attendees will better understand the mechanisms for THM removal based on the physical/chemical nature of THMs. Attendees will be able to understand the roles of various technology choices and form factors that can aid in the removal of THMs through in-tank aeration.

Primary Knowledge/Skills/Abilities Related to Presentation: Ethan has a background in civil engineering and product management and has worked on a variety of water, wastewater and distribution system infrastructure improvement projects.

Education: Hall-Dall Highschool class of 95. Antioch college, double major in Physics and Sculpture MS University of NH. Civil engineering 2009

Professional Registration/Certification: Master's thesis on THM aeration was published in the Journal American Water Works Association and resulted in three patents which are held by the University of New Hampshire

Professional Organizations/Activities: Current chair of the CA-NV distribution system water quality committee

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Operator Round Table

Presenter: Jeff Brown **Job Title:** Public Works Superintendent

Employer: City of Pendleton

Phone #: 541-969-3083 **Email:** jeff.brown@ci.pendleton.or.us

Summary of Lesson Content: This presentation will provide the operators in attendance a network of peers that they will be able to discuss operational issues with. This type of introduction to a group of peers is of extreme value in the rural half of the state. With budget restraints and the number of certified operators on the decline operators need to learn to support each other. In this format, water quality and public health will remain at top quality into the future.

CEU Relevancy: The object of the round table will be to allow a platform for operators to share experiences and ask questions of their peers. The operators will all be expected to share a short description of their job and water and/or wastewater system. This will be an open conversation where any and all operational issues can be brought up and discussed. At the end of the class a list of names and contact information will be provided to attendees so they will be able reach out to their peers in the future.

Professional Background: See attached

Primary Knowledge/Skills/Abilities Related to Presentation: See attached

Education: HS Diploma

Professional Registration/Certification: OR - WWC 4 #9880 WWT 1 #9209 WD 1 #6431

Related Papers/Instruction Given: Operator Math. EO Operators Conference 2012 - 2019

Professional Organizations/Activities: PNCWA Oregon Region Director

Course Sponsor: Eastern Oregon AWWA/PNCWA

JEFFREY M. BROWN

43612 Elder Ave **(541) 215-0341**
Pendleton, OR 97801 **jeff.brown@ci.pendleton.or.us**

QUALIFICATIONS

Fourteen years' experience as Public Works Superintendent overseeing three divisions of the Public Works Department, Construction and Repair Division, Streets Division, and Wastewater Collections Division. I also act as fleet manager for the Public Works Department and I oversee building maintenance of the Public Works Shop and associated buildings.

Twenty-four years of increasing responsibilities and skills in:

Construction and replacement of new and existing infrastructure:

- Installed new water and sewer lines
- Video inspection for approval of new wastewater collection lines and report to engineering
- Layout and installed sewer lines for proper grade to allow gravity flow
- Prepare equipment lists and organized needs for projects
- Constructed and installed manholes for sewer lines
- Tapping water lines – Dry and Live Taps
- Prepared as-builts for the engineering department
- Located and cleaned storm sewer outlets and prepared storm sewer location map for Public Works Department
- Installed water meters and services as needed
- Assisted in the installation of the boiler in the Wastewater Treatment Plant(WWTP)

Equipment operation and maintenance:

- Operated many different types of heavy equipment including; Backhoe, Excavator, Dump Truck, Sludge Truck, Sewer Jet Truck, Street Sweeper, Crane, Road Grader, and Front End Loader
- Assisted with the maintenance of the above equipment
- Operated and maintained equipment used in the public works departments including; Rodding Machine, Tapping Machines, Sewer Root Foamer, Cut-off saws, pumps, air compressors, generators and other miscellaneous equipment.
- Conduct monthly inspections and maintenance of all equipment at the WWTP, complete all necessary record keeping and data entry in the computer maintenance program
- Make necessary adjustments to constantly improve maintenance

Repair and maintenance of existing infrastructure:

- Repaired or replaced water and sewer lines as needed, made recommendations on the condition of these lines
- Repaired or replaced manholes as needed, made recommendations on the condition of the manholes
- Video inspection of wastewater and storm water collection lines, make recommendations to Public Works Superintendent on the necessary repairs or replacements
- Grading gravel streets throughout the city and providing documentation of completion
- Repair, maintain, and replace equipment including pumps, valves, and control systems in sewer lift stations
- Helped to maintain water distribution system for the city

EXPERIENCE

Public Works Superintendent *City of Pendleton* *Pendleton, Oregon*
September 2003 – Present

- Supervision over three divisions within the Public Works Department, and full supervision over 10 – 15 employees.
- Maintain records of all aspects of maintenance activities within those divisions
- Maintains personnel records and conducts disciplinary action as needed
- Directs and plans major and minor construction and repair projects to be done by City staff.
- Prepare specifications and bid packets for purchases of new equipment and/or materials
- Assist in planning and tracking budgets within divisions supervised

Operator II *City of Pendleton, Wastewater Treatment Plant* *Pendleton, Oregon*
January 2003 – September 2003

- Minor supervision is a regular responsibility, exercises full supervision over employees in absence of superintendent and operations technician.
- Operates, maintains, and performs major and minor repairs on all equipment in the WWTP.
- Performs minor lab analysis on a regular and performs all laboratory analysis when necessary.
- Manages computerized maintenance program.
- Makes recommendations in the planning and organizing of WWTP projects.

Operator I *City of Pendleton, Wastewater Treatment Plant* *Pendleton, Oregon*
January 2001 - January 2003

- Maintain equipment, lawns, and buildings.
- Minor lab analysis.
- Minor adjustment to equipment.
- Clean and paint equipment.
- Works under the supervision of the Operations Technician and WWTP Superintendent.

Utility Worker II *City of Pendleton, Public Works Department* *Pendleton, Oregon*
September 1993 - January 2001

- Operate, repair, and maintain Public Works Department equipment.
- Perform construction and repair projects for water, sewer and other city departments
- Weld and fabricate as needed
- Prepare and coordinate people, parts, and equipment for efficient project completion.

Utility Worker I *City of Pendleton, Public Works Department* *Pendleton, Oregon*
January 1993 - September 1993

CERTIFICATION

Oregon Class A CDL with Tank Endorsement
Oregon Water Distribution, Grade I
Oregon Wastewater Collections, Grade IV
Oregon Wastewater Treatment, Grade I
Competent Person Certification

EDUCATION

Pendleton High School, Graduated 1988
Blue Mountain Community College, 1988-89

AFFLIATIONS

PNCWA Oregon Region Director 2017 – 2019
Past Eastern Oregon Region PNCWA Committee President
Oregon PNCWA Executive Board Member

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Pumping System Troubleshooting for Operators

Presenter: Jason Carman **Job Title:** Rural Development Specialist

Employer: Rural Community Assistance Corporation

Phone #: 4582213473 **Email:** jcarman@rcac.org

Summary of Lesson Content: The attendees will learn basic pump performance testing and troubleshooting techniques. We will go over the main types of pumps used in water and wastewater systems, discuss their performance characteristics and how to troubleshoot these pumps and their related infrastructure. Attendees will learn about Lock Out, Tag Out (LOTO) safety procedures along with general employee safety when working in close proximity to exposed rotating elements.

CEU Relevancy: This information will help operators understand their systems to a much higher level. They will be better equipped to troubleshoot issues and more quickly and effectively respond to issues when they occur. The information will help them feel more confident about making operational changes to their water and wastewater systems to better react to operational changes and when to involve a professional in the troubleshooting process.

Professional Background: Work experience and education:

a. Jason is a certified water distribution and treatment operator and also a licensed Limited Maintenance Electrician in the state of Oregon. He has been a maintenance electrician and water operator for 2 of Oregon's largest publicly owned electric/water utilities and was a field service technician/troubleshooter for a private pump and mechanical contractor that served over 60 different water and wastewater utilities and municipalities in the Pacific Northwest. His main areas of expertise are water distribution and treatment operations, pumping system troubleshooting/maintenance, electrical system troubleshooting, power quality monitoring, industrial automation including PAC/PLC programming/troubleshooting and SCADA system maintenance and development. He has an AAS in Computer Networking Technology earned in 2002 with a focus on Ethernet networking and Windows server domain administration that he has applied to designing, implementing, and administrating industrial control and SCADA networks over a variety of topologies and media.

b. He currently holds both water distribution Grade 4 and water treatment Grade 3 operator certifications issued by the Oregon Health Authority, Drinking Water Program. He is the former water distribution Direct Responsible Charge (DRC) for Eugene Water and Electric Board (EWEB), a utility with over 60,000 water service connections. He has been a water distribution and treatment operator for 16 years.

c. Before RCAC, Jason was employed at Eugene Water and Electric Board for 6 years as the Water Pumping and Controls Supervisor. His staff was responsible for first response to water emergencies like main breaks, transmission and distribution operations including pump stations and finished water storage, electrical and SCADA maintenance/repair for the drinking water systems, customer metering, and cross connection/backflow.

d. Before EWEB, Jason spent 10 years at Springfield Utility Board (SUB) where he was responsible for all treatment and distribution operations which included 2 treatment plants, well sources, water pumping stations, finished water storage and pressure zone control. He was also responsible for all of the electrical, control, PAC/PLC programming and SCADA system maintenance/integration which included administration of the Water Division's fiber optic Ethernet control network and Windows servers.

e. Before SUB, Jason spent 13 years working for Stettler Supply Company where he was a water service technician and large project site lead. He spent that time installing, troubleshooting and maintaining a wide variety of fluid handling and treatment systems.

Primary Knowledge/Skills/Abilities Related to Presentation: Utility operations and extensive first-hand mechanical/electrical troubleshooting experience.

Education: High school diploma, AAS, Computer Networking Technology 2002

Professional Registration/Certification: Oregon Health Authority-Water Distribution 4, Water Treatment 3. Oregon Building Codes-Limited Maintenance Electrician

Related Papers/Instruction Given: Electrical, Control and Pumping Systems for Operators-09/25/2019 for Eastern Oregon AWWA/PNCWA. Electrical and Pumping Systems for Operators-12/05/19-Yavapi Apache hosted in Camp Verde, AZ

Professional Organizations/Activities: Volunteer AWWA Cascade to Coast subsection presenter

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: DEQ Wastewater Operator Certification Basics

Presenter: Paula Carson

Job Title: Wastewater Operator Certification Program Assistant

Employer: Oregon DEQ

Phone #: (503) 229-5161

Email: carson.paula@deq.state.or.us

Summary of Lesson Content: DEQ Wastewater System Operator Program information: webpage navigation, review of current application forms, getting certified: new and upgrades, basics on DEQ Wastewater Permits & System Classification, renewals, CEUs, other related organizations, Q & A.

CEU Relevancy: This presentation will cover the application and certification process for wastewater operators, tips to avoid mistakes, an overview of where to find the information you need on DEQ's website, and an opportunity for program feedback.

Professional Background: Experience in the Oregon DEQ Wastewater System Operator Certification Program since Nov. 2010, interim coordinator during vacancies.

Primary Knowledge/Skills/Abilities Related to Presentation: Experience in the Oregon DEQ Wastewater System Operator Certification Program since Nov. 2010, interim coordinator during vacancies.

Education: BS Natural Resources Sciences, AAS Computer User Support

Professional Registration/Certification:

Related Papers/Instruction Given: Same presentation at E OR Oper Conf 2017/2020

Professional Organizations/Activities: n/a

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Modern Lift Station Design

Presenter: Simon Cartwright

Job Title: Municipal Projects - Representative

Employer: Xylem (Flygt Products)

Phone #: 5039130119

Email: simon.cartwirght@xyleminc.com

Summary of Lesson Content: Todays municipalities are faced with challenges in regards to new lift stations and retrofits that require additional considerations not covered in the Oregon Standards for Design and Construction of Wastewater Pump Stations (May 2001). With new products (flushables) causing ragging issues, reduced operating budgets, green requirements and OH&S issues coming to the fore in many instances; municipalities should consider creating their own strategies to supplement the DEQ guidelines.

CEU Relevancy: This class will address these and other issues by looking at the cause and the technology currently available to deal with these modern considerations. By the end of class participants should have a solid understanding of the issues facing the modern pumping station and the tools to write their own guidelines to improve their collection system.

Professional Background: See attached

Primary Knowledge/Skills/Abilities Related to Presentation: 23 years Pumping experience specifically in the Wastewater submersible field. Process control background for over 30 years.

Education: Royal Australian Naval College Nirimba, Electrical Fitter Machinist

Professional Registration/Certification: NA

Related Papers/Instruction Given: Modern Lift Station Design (UBOS Aug 2019, OAWU Sunriver 2018)

Professional Organizations/Activities: NA

Course Sponsor: Eastern Oregon AWWA/PNCWA

Professional Background

Simon Cartwright

Simon Cartwright joined Xylem- Flygt Portland as the Municipal Projects Representative in October 2011. Prior to this he worked at Orenco Systems for 5 years culminating as the Eastern Regional Manager, supporting Orenco's distributors and dealers east of the Rocky Mountains and internationally (Canada and South Pacific) specializing in residential on-site treatment.

A native of Australia, Simon served 10 years in the Royal Australian Navy, working in both the electrical and mechanical engineering fields. After the military, he worked in engineering sales for Flygt in Australia, helping engineers design, install, and maintain private and municipal wastewater pumping and control systems.

Simon also owned and operated a bookstore for seven years, so he's well-grounded in business management. Simon came to Oregon to be closer to his wife's family, and spends much of his time off experimenting with growing Périgord truffles at his home orchard located in Cottage Grove.

Municipal Projects- Representative
9625 SW Tualatin Sherwood RD
Tulatin OR 97062
503.290.2170 503.913.0119

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Checking in on Check Valves: Types and Selection

Presenter: Steve Causseaux **Job Title:** Water Management Consultant

Employer: Cimco-GC Systems **Ph #:** 2535345667 **Email:** steve@cimco-gcsystems.com

Summary of Lesson Content: This class explains the various styles of check valves available on the market and their applications. We discuss pros and cons of each type including head-loss, slamming, and maintenance.

CEU Relevancy: Check valves are used throughout water and wastewater systems usually downstream from pumps. This course will help operators not only understand what is present in their system, they will also learn about different check valve designs which are made for specific applications and benefits. This will be important for maintenance, eventual replacement, and new installations.

Professional Background: A native to the Pacific Northwest United States, Steve has spent the past 15 years working in water management for irrigation, waterworks, and construction projects. As an environmental consultant in the Arizona deserts, he worked with most major home builders during the housing boom of 2003-2008 to control sediment, pollutants, and erosion which protected desert waterways and ground water during construction. As a water consultant for 12 years with Cimco-GC Systems, a local waterworks representation and service firm, Steve helps water districts manage their systems and source conservation innovations for water distribution and irrigation.

Primary Knowledge/Skills/Abilities Related to Presentation: A native to the Pacific Northwest United States, Steve has spent the past 15 years working in water management for irrigation, waterworks, and construction projects. As an environmental consultant in the Arizona deserts, he worked with most major home builders during the housing boom of 2003-2008 to control sediment, pollutants, and erosion which protected desert waterways and ground water during construction. As a water consultant for 12 years with Cimco-GC Systems, a local waterworks representation and service firm, Steve helps water districts manage their systems and source conservation innovations for water distribution and irrigation.

Education: Bachelor of Arts - Hillsdale College

Related Papers/Instruction Given: 1) Specialty Valve Selection: Check Valves and Air Valves - Dec. 2020, OAWU Winter Conference 2) Control Valve Basics, April 2020, E. OR AWWA Short School

Professional Organizations/Activities: AWWA Member, OAWU Member, ERWOW Member

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Control Valves

Presenter: Steve Causseaux **Job Title:** Water Management Consultant

Employer: Cimco-GC Systems **Phone #:** 2535345667 **Email:** steve@cimco-gcsystems.com

Summary of Lesson Content: This presentation will take a fundamental look inside the hydraulically operated, automatic control valve. These are used in many application included, PRV's, pressure relief valves, booster pump control valves, surge valves and many more. Operators will leave with an understanding of how to identify key components and basic troubleshooting/maintenance.

CEU Relevancy: Most distribution and smaller water systems have multiple control valves in the field to manage system pressure and/flow rates. Operators will use this knowledge to have better control of their system, maintaining more accurate set-points, and making sure they get the full lifespan out of such a crucial component.

Professional Background: A native to the Pacific Northwest United States, Steve has spent the past 15 years working in water management for irrigation, waterworks, and construction projects. As an environmental consultant in the Arizona deserts, he worked with most major home builders during the housing boom of 2003-2008 to control sediment, pollutants, and erosion which protected desert waterways and ground water during construction. As a water consultant for 12 years with Cimco-GC Systems, a local waterworks representation and service firm, Steve helps water districts manage their systems and source conservation innovations for water distribution and irrigation.

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Education: Bachelor of Arts - Hillsdale College

Related Papers/Instruction Given: 1) Specialty Valve Selection: Check Valves and Air Valves - Dec. 2020, OAWU Winter Conference 2) Control Valve Basics, April 2020, E. OR AWWA Short School

Professional Organizations/Activities: AWWA Member, OAWU Member, ERWOW Member

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Factory of the Future; Next-Generation Controls

Presenter: Randy Chann **Job Title:** Managing Executive

Employer: BioChem Technology **Phone #:** 5734890244 **Email:** rchann@biochemtech.com

Summary of Lesson Content: Part 3 of 3 - Review role of controls in process optimization and automation. Present lessons learned from conventional control solutions and demonstrated performance from next-generation, 4.0, software solutions. Applications focus on aeration automation and emerging process optimization solutions (ammonia based aeration control).

CEU Relevancy: As the industry focuses on nutrients and reduced energy use, the operational demands for the secondary plant are unprecedented. Now real-time process optimization and tight automation is necessary. Next-gen software solutions uniquely use plant specific knowledge to deliver historically unavailable performance and intended results. Further with broader application, future asset management and plant equipment designs can now be right-sized for greatest delivered value.

Professional Background: Attached

Primary Knowledge/Skills/Abilities Related to Presentation: 40 yrs of design and O&M experience in aeration and wastewater municipal and industrial wastewater operations

Education: Wilton HS, Union College BSCE, Case Western Reserve Univ MBA

Professional Registration/Certification: PE (OH, MS)

Related Papers/Instruction Given: Aeration; Why, How, and New O&M Realities, Nov 17, 2020, MO W&WW Conference, The Future is Now, Sept 23, 2020, PNCWA Eastern Region, Factory of the Future, Oct 14, 2020, MWWC,

Professional Organizations/Activities: Member ASCE Oxygen Transfer Standards Committee, Chairman Boone County Regional Sewer District, Board Member Missouri Water Resources Research Center,

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Aeration; Why, How, and New O&M Realities

Presenter: Randy Chann **Job Title:** Managing Executive

Employer: BioChem Technology **Phone #:** 5734890244 **Email:** rchann@biochemtech.com

Summary of Lesson Content: Review basics of biological treatment, critical process setpoints, and corresponding requirements for aeration, both mass and residual dissolved oxygen. Compare and contrast operating strategies for BOD removal, nitrification, and nutrient removal. Discuss equipment design and sizing protocols. Review impacts of diurnal loading on process needs and performance. Discuss impacts of equipment condition on operational requirements. Expand on equipment design requirements and criticalness of turndown. Review criticalness of process optimization and equipment operations. Review DIY opportunities for improved BNR performance and optimized operations.

CEU Relevancy: As the industry focuses on nutrients and reduced energy use, aeration is a critical operational parameter. Operators will benefit with a more in-depth understanding of aeration and the criticalness of aeration on process performance. The information also highlights the importance of equipment selection and design, as well as, the role of operations on plant performance.

Professional Background: Attached

Primary Knowledge/Skills/Abilities Related to Presentation: 40 yrs of design and O&M experience in aeration and wastewater municipal and industrial wastewater operations

Education: Wilton HS, Union College BSCE, Case Western Reserve Univ MBA

Professional Registration/Certification: PE (OH, MS)

Related Papers/Instruction Given: Aeration; Why, How, and New O&M Realities, Nov 17, 2020, MO W&WW Conference, The Future is Now, Sept 23, 2020, PNCWA Eastern Region, Factory of the Future, Oct 14, 2020, MWWC,

Professional Organizations/Activities: Member ASCE Oxygen Transfer Standards Committee, Chairman Boone County Regional Sewer District, Board Member Missouri Water Resources Research Center,

Course Sponsor: Eastern Oregon AWWA/PNCWA

Randall C. Chann, PE

3455 South Old Ridge Road, Columbia, MO, 65203, 573-489-0244, chann.randy@gmail.com

Experience

Managing Executive

2016 – Present BioChem Technology, Inc., Eagleville, PA

- Broadened focus of advanced digital solutions to include intelligent operations management including asset management and fault detection analytics.

Chief Innovations Officer (CIO)

Executive Committee – Member

2015 – 2020; Environmental Dynamics Inc., Columbia, MO

- Spearheaded development of Symphony offering with point source responsibility for the operating function of the deployed aeration equipment.
- Developed turnkey aeration offering for produced water reuse applications.
- Applications advisor for industrial wastewater installations.
- Developed plant performance assessment program and supported the development of outcome-based solutions.

President / CEO

2009 - 2015: Environmental Dynamics Inc., Columbia, MO

- Lead management buy-out program for executive group

Executive Vice President – Sales and Marketing

1996 – 2009; Environmental Dynamics Inc., Columbia, MO

- Executive Committee / Established overall company direction and directed profitability task force and profit enhancement initiative.
- Marketing / Formalized marketing function with development of marketing department. Developed new marketing campaigns including literature, website and tradeshows.
- Sales Management / Directed representative and key account territory managers and application sales group.
- Sales Management / Oversight of Diffuser Express division. Revenues approached 25% of total revenues.
- Process Engineering / Developed patented technologies to achieve advanced performance in lagoons.
- Product Engineering / Directed development of new products including design, manufacturing specifications, and application guidelines.
- Wet Lab / Oversight of analytical services department.

Vice President – Operations

1990 – 1996; Environmental Dynamics Inc., Columbia, MO

- Division Management / Integrated operations functions including engineering, project management, purchasing, manufacturing, field services, and wet laboratory.

Director – Engineering

1987 – 1990; Environmental Dynamics Inc., Columbia, MO

- Product Development and Design / Optimized functional design of existing products including Reef diffuser and associated piping systems,

developed wide band coarse bubble and patented flexible membrane fine bubble diffuser, and design standards and application methodologies for all products.

- Wet Lab / Constructed required test facilities and completed dynamic wet pressure and non-steady state oxygen transfer efficiency tests on diffuser products.
- Project Management / Completed final engineering and management of orders including engineering submittal packages, installation, operation, and maintenance manuals, system inspection and commissioning.
- Sales / Developed sales tools and executed sales process including process and mechanical design, cost estimating, proposal preparation, bidding, and representative and account management.

Development Engineer

1985 – 1987 BP America, Cleveland, OH

- Technology assessment / Member of business and technology review team. Assessed new and emerging technologies including powdered activated carbon and vertical tube reactor for wastewater treatment, solvent extraction for oily solid wastes, solar panels for electric power generation and batteries for electric energy storage.

Senior Engineer

1980 – 1985 The Standard Oil Company, Cleveland, OH

- Regulatory review / Water and solids rule review, and impact assessment on operations.
- Facility Design / Performance analysis of existing infrastructure. Design and execution of onsite pilot testing. Facility design to meet new petroleum refining and RCRA regulations. Project management for contracted design services.
- Technical Services / Technical support during project construction. Field inspection, operator training and system commissioning.
- Operations Review / Completed RCRA hazardous waste inventory for lower 48 exploration and drilling operations.

Education

Case Western Reserve University, Cleveland, OH

1981 - 1985

- Masters – Business Administration

Union College, Schenectady, NY

1976 - 1980

- Bachelor – Civil Engineering, cum laude

Professional Activities

Professional Engineer in Ohio and Mississippi

Member ASCE Oxygen Transfer Standards Committee

Member WEF Municipal Design Standards Committee

Chairman Boone County Regional Sewer District

Past Member Central Missouri Manufacturer's Training Consortium

Board Member Missouri Water Resources Research Center

3455 South Old Ridge, Columbia, MO, 65203, 573-489-0244, chann.randy@gmail.com

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: "OSHA's Focus Four"

Presenter: Eric Fullan **Job Title:** Safety Officer

Employer: City of Hillsboro

Phone #: 503-615-6586 **Email:** eric.fullan@hillsboro-oregon.gov

Summary of Lesson Content: “OSHA’s Focus Four” OSHA has identified and focuses attention on the four safety and health hazards that are injuring and killing workers. This four-hour session will focus on those hazards as they apply to the Water and WasteWater industry. Topics include Struck by, Struck against, Electrocution, Falls, Silica, Noise, Asbestos, Lead and the safe work practices to deal with these hazards in treatment plants, pipework, confined spaces and the shop.

CEU Relevancy: Water and Wastewater operators work around hazards all day. This session will focus on the most serious safety and health hazards they encounter and how to protect themselves from those hazards

Professional Background: N/A

Primary Knowledge/Skills/Abilities Related to Presentation: Safety Professional

Education: College

Professional Registration/Certification:

Related Papers/Instruction Given: Frequnt presenter at short schools around the state

Professional Organizations/Activities: AWWA, ASSP

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Excavation Safety and the Rolle of the Competent Person

Presenter: Eric Fullan **Job Title:** Safety Officer

Employer: City of Hillsboro

Phone #: 503-615-6586 **Email:** eric.fullan@hillsboro-oregon.gov

Summary of Lesson Content: Overview of OSHA excavation Standard with an emphasis on the Competent Person requirements that include identifying existing and predictable hazards, soild analysis and protective systems

CEU Relevancy: Provide water and wastewater employees with a working knowledge of the OSHA's excavation standard, including soils, protective systems and the responsibilities of the Competent Person

Professional Background: N/A

Primary Knowledge/Skills/Abilities Related to Presentation: Safety Professional

Education: College

Professional Registration/Certification:

Related Papers/Instruction Given: Frequnt presenter at short schools around the state

Professional Organizations/Activities: AWWA, ASSP

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Communicating with Engineers - Getting Non-Communicators to Understand Each Other

Presenter: Michael Grimm **Job Title:** General Manager

Employer: West Slope Water Dist **Phone #:** 5037290544 **Email:** mgrimm@wswd.org

Summary of Lesson Content: Engineers and operators often speak different languages and have different perspectives on the same project. How can operators effectively communicate with engineers to achieve the desired results for their project? How can operators and engineers understand one another?

CEU Relevancy: To achieve the desired results for any project, there needs to be clear communication between water utility staff (operators) and consulting engineers. To effectively communicate with each other, each has to know the needs of the other. For the consulting engineer to know what design meets the water utility's needs, the water utility needs to communicate clearly through proposals and scopes of work.

Professional Background: 1986-2004: Water quality manager/engineer with OHA; 2004-2009 Senior water engineer with City of Gresham & Sunrise Water Authority; 2009-2013: Senior water engineer for Cadmus (private engineering and environmental consulting firm); 2009-2015: Owner and president of Aquamize, LLC consulting firm; 2015-Present: General Manager for West Slope Water District

Primary Knowledge/Skills/Abilities Related to Presentation: General Manager of a water district, consulting engineer, ability to work with operators and engineers to complete projects

Education: B.S. Civil Engineering - Oregon State University

Professional Registration/Certification: Registered Professional Civil & Environmental Engineer

Professional Organizations/Activities: Member of AWWA since 1986

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Lagoon Management and Solids Reduction

Presenter: Tanner Hartsock **Job Title:** Consultative Sales Rep

Employer: BioLynceus **Phone #:** 970-342-5297 **Email:** tanner@biolynceus.net

Summary of Lesson Content: Wastewater operators will learn how to effectively manage their lagoons in a world of increasing regulations. The presentation will introduce lagoons in a way that new operators can understand. There will be an emphasis on how to best manage pretreatment ordinances to avoid operational challenges, as well as a workshop to help operators better understand and manage their biosolids.

CEU Relevancy: Lagoons are a common wastewater treatment vessel, and in many cases are small systems with limited personnel. Learning how to effectively manage lagoons is a powerful tool for any wastewater operator. I will start with the basics of lagoons (style, biology, etc.) and work into best management practices such as pretreatment, solids handling and toxic shock recovery.

Professional Background: M.Sc. Geoscience - University of Iowa, 2019 - TA/RA responsibilities

BioLynceus - 2019-present

Primary Knowledge/Skills/Abilities Related to Presentation: Over a year of working hands on with wastewater professionals to meet their wastewater needs

Education: Master's in Geoscience

Professional Registration/Certification:

Related Papers/Instruction Given: Solids Reduction and Lagoon Management - OAWU Seaside, OAWU Hood River

Professional Organizations/Activities: OAWU, ERWOW, PNCWA, CRWA, RMWEA

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Operator Math 1-2, Operator Math 3-4

Presenter: Jadon Herron **Job Title:** Project Engineer

Employer: Anderson Perry & Associates, Inc.

Phone #: 541-805-9328 **Email:** jherron@andersonperry.com

Summary of Lesson Content: Algebraic processes, unit conversion, level 1 and 2 sample problems, level 3 and 4 sample problems.

CEU Relevancy: Ensure the calculations necessary for proper operations, maintenance and reporting are done correctly.

Professional Background: I have been a civil engineer for Anderson Perry & Associates, Inc. for 7 years.

Primary Knowledge/Skills/Abilities Related to Presentation: The presentation is Operator Math 1-2 and 3-4. As part of my engineering degree, I completed 24 credits of mathematics. During college I also won the Consortium on Mathematics and its Applications 96 hour worldwide math competition. As a professional engineer I apply mathematics to water and wastewater related topics on a routine basis.

Education: Oregon State University Bachelor of Science Civil Engineering

Professional Registration/Certification: Professional Engineer, Certified Water Rights Examiner

Related Papers/Instruction Given:

Professional Organizations/Activities:

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Impact of Wildfires on Drinking Water Systems

Presenter: Evan Hofeld **Job Title:** Environmental Engineer 3

Employer: Oregon Health Authority - Drinking Water Services

Phone #: 503-504-8222 **Email:** evan.e.hofeld@dhsoha.state.or.us

Summary of Lesson Content: This presentation will highlight the impacts of wildfires on drinking water sources, treatment, and distribution systems and provide resources for emergency response planning in the event of wildfires. Impacts specific to the 2020 Oregon Wildfires will be presented to illustrate recent events.

CEU Relevancy: Wildfires can have tremendous impacts to source water quality requiring operators to adapt treatment strategies to address changing source water characteristics. Distribution systems may also be heavily impacted and can result in VOC contamination and operational challenges. By understanding these impacts before a wildfire event, water utility operators and managers can better plan and prepare to meet these challenges, while improving community resiliency and recovery efforts.

Professional Background: My responsibilities with the State include responding to water quality issues, determining compliance, and providing regulatory assistance and guidance on sampling and monitoring to water system operators. Over the years, I have also been responsible for conducting routine sanitary surveys for surface water systems in Multnomah, Columbia, Clatsop, Yamhill, Washington, Polk and Tillamook Counties. Treatment systems in these counties include direct, conventional, slow sand, cartridge, and membrane filtration and ranged in size from less than 100 gpm up to 75 MGD. I have also been responsible for reviewing and approving water system master plans and construction plans for distribution systems, storage tanks and reservoirs, and treatment for all systems in those counties and am currently responsible for systems in Hood River and Tillamook Counties. Nationally, I have contributed to updates regarding slow sand filtration in Chapter 10 of the AWWA/ASCE Water Treatment Plant Design, Fifth Edition (2012) and Chapter 5 of the AWWA Self-Assessment for Water Treatment Plant Optimization – Partnership for Safe Water (2015). In 2018 I concluded efforts to revise NSF/ANSI Standard 419-18– Public Drinking Water Equipment Performance – Filtration, a challenge testing protocol for cartridge, bag, and membrane filtration, which was

published in March of 2019. Efforts to update these publications have involved coordinating with a variety of stakeholders including manufacturers, regulators, operators, consultants, and academia.

Primary Knowledge/Skills/Abilities Related to Presentation: As part of my work with OHA-Drinking Water Services, I have worked with surface water treatment operators, water filtration manufacturers, USEPA, and other state agencies in developing optimization goals and guidelines for slow sand and membrane filtration systems. I have also developed materials and provided a wide variety of trainings focused on optimization of surface water drinking water filtration systems.

Education: B.S. in Environmental Engineering from Oregon State University

Professional Registration/Certification: Registered Civil Engineer in Oregon 58011PE

Related Papers/Instruction Given: Addressing Short-Term Threats and Needs for Drinking Water Systems Following Wildfires - Rogue Basin Wildfires and Drinking Water Supplies – Impacts and Opportunities - January 13, 2020

Professional Organizations/Activities: Area Wide Optimization Coordinator - State of Oregon-OHA-Drinking Water Services 2008 - current

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Pump Cavitation

Presenter: Jim Joyce **Job Title:** Mechanical Engineer

Employer: PumpTech, Inc.

Phone #: 4257856680 **Email:** jjoyce@pumptechnw.com

Summary of Lesson Content: The content of this presentation will include the properties of Water, Boiling, Water Vapor vs Air Bubbles, NPSHa, NPSHr, Bubble Collapse, Microjets, Metal Erosion, Off BEP Operation, Conventional Cavitation, Suction Recirculation Cavitation, Discharge Recirculation Cavitation, and Cavitation Prevention.

CEU Relevancy: Students will learn about the various system conditions that lead to pump cavitation and how they can be rectified. Understanding the causes of cavitation and how to eliminate them will always lead to lower maintenance costs and much longer pump life.

Professional Background: See attached

Primary Knowledge/Skills/Abilities Related to Presentation: Fluid Handling System design, operation and maintenance

Education: University of Washington, BSME

Professional Registration/Certification:

Related Papers/Instruction Given:

Professional Organizations/Activities: AWWA, WEF

Course Sponsor: Eastern Oregon AWWA/PNCWA

Instructor Bio

Jim Joyce – Mechanical Engineer
PumpTech, Inc. – 12020 SE 32nd ST, Bellevue, WA 98005
(425) 644-8501 x181

Jim Joyce is primarily responsible for sales and marketing of fluid handling and specialty products at PumpTech, Inc. a pumps and package systems manufacturer and distributor with branches throughout the Pacific Northwest. He also assists with customer and employee education of the specialty products PumpTech handles. He has a Bachelor of Science in Mechanical Engineering and over 30 years of experience in the design, installation and maintenance of variety of fluid handling systems, primary sensors and controls. His seminar audiences include consulting engineers, municipal employees, the AWWA, ERWOW, WEF, RWA, PNCWA and industrial and petrochemical plants.

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Cross Connection and Backflow Protection Certification Overview

Presenter: Molly Keller **Job Title:** Program Analyst 2

Employer: OHA - DWS

Phone #: 360-907-4487 **Email:** molly.a.keller@dhsoha.state.or.us

Summary of Lesson Content: An overview on what is required for Tester/Specialist certification and how to renew your certification. Including tips and tricks for Specialists and what is up and coming for the DWS certification program.

CEU Relevancy: The presentation will help operators understand what is required for tester/specialist certification and if they already have tester/specialist certification it will allow them to familiarize themselves with renewal requirements and keep them up to date with the direction of the certification program.

Professional Background: NA

Primary Knowledge/Skills/Abilities Related to Presentation: I run the Cross Connection and Backflow Prevention program for the State of Oregon Drinking Water Program.

Education: BA - Environmental Policy and Planning

Professional Registration/Certification: NA

Related Papers/Instruction Given: NA

Professional Organizations/Activities: NA

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Technology behind AMR/AMI

Presenter: Kali Kocdemir **Job Title:** Territory Manager

Employer: Nicor, Inc. **Phone #:** 3036814304 **Email:** KaliLKocdemir@nicorinc.net

Summary of Lesson Content: Cellular communication, radio waves, batteries. We use these technologies every day and sometimes even take them for granted. But, could you explain how cell phone technology worked if a 5th grader asked? You may think, "I'm in the water business, why do I need to know radio waves 101 fundamentals?" Because while this technology is not new, its application to the water industry is and it's revolutionizing the way water professionals work. This session will cover the two main types of meter reading technology (cellular and radio) - how they work and detailed pros and cons of each type. It will also cover case stories of how other water utilities improved their radio communication performance at the meter installation site.

CEU Relevancy: Without this knowledge, utilities are faced with making big-budget decisions without a basic understanding of how the solution works. Understanding the fundamentals of how meter reading systems work gives your utility an unbiased view to make the next bid and selection process more straightforward.

Professional Background: Kali Kocdemir has nine years of experience in the advanced water meter and meter reading systems industry. Prior to Nicor, she spent five years at an international meter & systems manufacturer; during that time, she traveled around the country to countless water conferences and learned of the shared challenges public water departments face, as well as the regional and local differences that make each water system unique. Before joining (and falling in love with!) the water industry, she spent five years at a Department of Defense contractor.

Primary Knowledge/Skills/Abilities Related to Presentation: Nine years experience in advanced metering and systems manufacturing and support

Education: B.S, Management, University of Tennessee

Professional Registration/Certification:

Related Papers/Instruction Given: Communicating in the Pits: March 2020 for IRWA; Jan 2020 for SDRWA; Sep 2019 for RMSAWWA

Professional Organizations/Activities: PNW AWWA South South Subsection volunteer

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Static Meter Technologies

Presenter: Tim Loosier **Job Title:** Territory Manager

Employer: Neptune Technology Group

Phone #: 509-202-5686 **Email:** tloosier@neptunetg.com

Summary of Lesson Content: There are a number of metering options available to utilities today. Each can offer utilities different advantages. In this session we will discuss the various types of metering technologies so that utilities considering meter system upgrades can decide which type of meter will help them meet their goals. We will address various meter types and talk about the advantages and drawbacks of each.

CEU Relevancy: We will provide information on the different types of water meter technology available and help utilities assess what options best fit their long-term goals as they look to enhance or upgrade their metering systems.

Professional Background: See answers above

Primary Knowledge/Skills/Abilities Related to Presentation: Tim has spent the last 15 years in the utility AMR/AMI market space. Tim has extensive experience with large scale AMI deployments holding key roles in logistics management, operations management, and project management. His industry experience and customer needs based approach provide valuable insight.

Education: Applicable industry education available on request.

Professional Registration/Certification: Applicable industry certifications available on request.

Related Papers/Instruction Given: Various presentations over the last several years at OAWU, IRWA, and ERWOW conferences.

Professional Organizations/Activities: AWWA, OAWU, IRWA, ERWOW.

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Proper Nozzles Selection for Sewer and Storm

Presenter: Eric Lundy **Job Title:** Oregon Regional Manager

Employer: Owen Equipment

Phone #: 971-400-4002 **Email:** elundy@owenequipment.com

Summary of Lesson Content: Goes through different types of nozzles and the correct application for each. We also go over safety while jetting a Sewer/Storm line

CEU Relevancy: Helps operators understand what nozzles to use depending on situation which will allow them to get lines cleaner faster and safer.

Professional Background: Been selling and consulting with municipalities for the better part of 9 years

Primary Knowledge/Skills/Abilities Related to Presentation: Helped Municipalities in jetting sewer/storm lines through proper nozzle selection and steps to increase efficiencies.

Education: College Grad

Professional Registration/Certification: N/A

Related Papers/Instruction Given: Line Locating/Hydro-Excavation/Combination Trucks

Professional Organizations/Activities: Lectured at OAWU/APWA/AWWA

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Choosing the Right Blower Technology

Presenter: Tom McCurdy **Job Title:** Regional Director

Employer: Aerzen USA Corporation

Phone #: 6106561683 **Email:** tom.mccurdy@aerzen.com

Summary of Lesson Content: Blowers are a major user of energy in a wastewater plant. Energy efficiency is a major driver in blower development. With the improvements in blowers, it is critical to determine the appropriate technology to use, depending on system variables, control methods, and the degree of operator interaction.

CEU Relevancy: With the technologies available in the market, having the knowledge to understand the differences between technologies will help operations and maintenance personnel in understanding the equipment they currently have in the plant, and will also aid in future decisions on replacement and upgrade projects. This not only applies to the blower technologies themselves, but also to the control of the blowers.

Professional Background: My first job was in the compressor industry (Ingersoll Rand), second in industrial wastewater treatment chemicals (Betz), and the past 14 years with Aerzen.

Primary Knowledge/Skills/Abilities Related to Presentation: 14 years with Aerzen, dedicated to wastewater industry, numerous presentations at state shows, several instructional videos.

Education: Bachelor of Science, Mechanical Engineering, Rutgers University

Professional Registration/Certification:

Related Papers/Instruction Given: Choosing the Right Blower Technology, Presented at Colorado Operator Training School (2017-2019)

Professional Organizations/Activities: WWEMA (Water and Wastewater Equipment Manufacturers Association (Board Member)

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: The Fundamentals of Electrochemistry

Presenter: Mark McElroy **Job Title:** Sales Specialist, Water Analysis and Purification

Employer: Thermo Fisher Scientific

Phone #: 4258940111 **Email:** mark.mcelroy@thermofisher.com

Summary of Lesson Content: This is a practical look at tasks that are performed every day in the lab and in the plant. These functional tasks are often misunderstood and not performed properly. There will also be a detailed conversation about how things work and how to best troubleshoot. We will also discuss proper care and maintenance.

CEU Relevancy: See above... Additionally the properly trained operators are going to perform their measurements with more confidence as well as accuracy. Most operators have little or no training in the proper use of electrochemistry equipment.

Professional Background: See above

Primary Knowledge/Skills/Abilities Related to Presentation: Mr. McElroy first entered the Scientific Products industry in 1988. He has a very diverse background in the industry and understands the importance of the chemistry as well as the business needs of his customer base. Mr. McElroy has received extensive training and study in the field of electrochemistry as well as everyday application of these principles in the lab. He has also been a national presenter of these materials with consistently high ratings on content and delivery. Additionally, Mr. McElroy has presented the Fundamentals of Electrochemistry to over 150 groups across the Northwest and Western Canada. As a presenter of this material he continues to get very positive reviews from each presentation. Mr. McElroy was studying the pre-medical track at the University of Washington which involved over three years of intensive study in the sciences. After determining he was not going to be admitted into medical school, Mr. McElroy embarked on a career in sales that has spanned over 40 years.

Education: University of Washington, Pre-Med

Related Papers/Instruction Given: Presenting this content to W/WW schools for 13 years

Professional Organizations/Activities: Too many to list

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Using Oxygen Reduction Potential (ORP) to Pace Chlorine Disinfection

Presenter: Brett Moore **Job Title:** Senior Engineer

Employer: Anderson Perry & Associates, Inc.

Phone #: (541)963-8309 **Email:** bmoore@andersonperry.com

Summary of Lesson Content: This class will discuss the use of ORP monitoring of disinfected water to adjust chlorine dosing rates to achieve proper disinfection limits. Maintenance and calibration of ORP probes will be reviewed. Reliability and response time for the probes will also be discussed.

CEU Relevancy: This class will discuss the use of ORP monitoring of disinfected water to adjust chlorine dosing rates to achieve proper disinfection limits. Maintenance and calibration of ORP probes will be reviewed. Reliability and response time for the probes will also be discussed.

Primary Knowledge/Skills/Abilities Related to Presentation: Design and Operation and Maintenance Calculations

Education: MS Civil and Environmental Engineering

Professional Registration/Certification: Professional Engineer

Related Papers/Instruction Given: Several years of Math Class at the EO Operators Conference

Professional Organizations/Activities: WEF, ACEC, ASCE

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Water Reuse as a Water Management Strategy

Presenter: George Murgel **Job Title:** Project Engineer

Employer: HECO Engineers **Ph #:** 2088413188 **Email:** georgem@hecoengineers.com

Summary of Lesson Content: Increasingly stringent wastewater discharge regulations and the cost of wastewater treatment are just two of the many obstacles that rural communities in Idaho struggle within their mission to provide sewer services to citizens. Recycled wastewater provides a viable alternative to discharging treated wastewater to nearby rivers and streams. Treatment costs are an obstacle for purification up to drinking water quality, but the water of lower quality may still be used for irrigation purposes. The use of treated wastewater, especially in applications that are not required to meet drinking water quality, is widely recognized as a proven solution for communities, an alternative recourse from both drought and environmental protection viewpoint. As a result, water reclamation and reuse are being incorporated into sustainable development and integrated water management strategies.

CEU Relevancy: The presentation will step attendees through the essential elements of reusing treated wastewater. To achieve sustainability with small-scale applications, low cost, and simple operational wastewater treatment is essential. The presentation will cover real-world examples of how rural communities have successfully implemented wastewater reuse programs into their water management strategies, results, and lessons learned. After the presentation, attendees will have a better understanding of the resources available to them to get reuse programs started in their communities.

Professional Background: Attached.

Primary Knowledge/Skills/Abilities Related to Presentation: 25 yrs. Academics, > 16 years Consulting in Civil/Env. Eng.

Education: BS, MS-Civil Eng-Mt. State U; Ph.D.-Civil/Env. Eng.-Cornell Univ.

Professional Registration/Certification: Professional Eng. in ID, OR, MT, AZ, NV, & WA

Related Papers/Instruction Given: Sanitary Sewer Management Plans, 2020 East. OR Ops Conf.

Professional Organizations/Activities: Member ASCE; NCEES exam writer SME, committee member

Course Sponsor: Eastern Oregon AWWA/PNCWA

George A. Murgel, P.E., Ph.D. began his engineering career in 1978 after completing his Master's degree in Civil and Environmental Engineering. He spent the next eight years working for consulting firms in St. Louis, Portland Maine, and Kalispell Montana gaining experience in effluent guidelines development for the US EPA, water and wastewater design for systems ranging from individual homes to multi-million-dollar municipal treatment facilities, and construction inspection experience at major facilities construction projects. He returned to academic life to complete requirements for a doctorate in Civil and Environmental Engineering leading to a nearly 25-year stint as an Assistant and later Associate Professor at the University of North Carolina Charlotte and more recently Boise State University where he taught courses in environmental engineering and process chemistry, water and wastewater treatment system design, hydraulics, hydrology, and introductory surveying along with other service courses like statics and strength of materials. He retired from academics in early 2016 and joined the firm Holladay Engineering, now HECO Engineers. He has since provided project management and design services on a variety of projects for the US National Park Service including site assessment of water and wastewater facilities, design development services, and project management at national parks and monuments in the Western United States. He has also been involved with the National Council for Examination of Engineers and Surveyors (NCEES) for nearly 15 years as a design development engineer for the environmental engineering Fundamentals of Engineering (FE) exam, chair and lead of the same module, selected and served as vice-chair and then chair of the entire FE exam development committee during the transition from pencil and paper exams to computer-based testing. He also is the current chair of the Examination of Professional Engineers (EPE) Committee with oversight on the administration of all Professional Engineering exams to computer-based testing. He was appointed to the Idaho Board of Professional Engineers and Land Surveyors in 2012, served as Board chair in 2016-17, and was reappointed to a second 5-year term in 2017.

Education & Training:

- Ph.D., Civil & Environmental Engineering, Cornell University, 2016
- MSCE, Civil Engineering, Montana State University, 1978
- BSCE, Civil Engineering, Montana State University, 1976

Registrations:

- Registered Professional Engineer: Arizona, Idaho, Montana, Nevada, Oregon, & Washington

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Introduction to small MBR treatment systems

Presenter: Chris Nally **Job Title:** Sales Manager

Employer: Cloacina

Phone #: 805-441-0212 **Email:** Chrisn@cloacina.com

Summary of Lesson Content: Introduction to the basics of small membrane bioreactor systems, including process design, equipment selection, control strategy and routine operations.

CEU Relevancy: Package MBR units are becoming more prevalent throughout the country, being used for industrial pretreatment, remote treatment and upgrading existing systems to meet more stringent effluent requirements.

Professional Background: Chris began his career in the wastewater industry sweeping floors and painting pipes as an OIT. Twenty years later, he has operated over 100 different private and municipal systems including: Avila Community Services District, City of Paso Robles, City of Kirkwood, Town of San Simeon, Coca Cola, the County of Los Angeles and multiple wineries in the Paso Robles and Napa regions. Since the inception of Cloacina, he has overseen the design of all package wastewater treatment plants and recently transitioned to the position of Sales Manager where he supervises the marketing staff and outside sales representatives.

Primary Knowledge/Skills/Abilities Related to Presentation: Resume sent

Education: High School

Professional Registration/Certification: California Grade 3 WW Operator

Related Papers/Instruction Given:

Professional Organizations/Activities:

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: IoT in the Cloud

Presenter: Rick Patton **Job Title:** Director of Marketing and Sales

Employer: Advanced Control Systems

Phone #: 208-991-7174 **Email:** rick@advancedcontrol.com

Summary of Lesson Content: The world is becoming ever increasingly connected. High speed connectivity has arguably had the most significant impact on our world during the last decade. Cellular has led the way. Satellite is around the corner. We've gone from 3G to 4G LTE and next is 5G and it goes on and on. But we need "things" to connect between. So the term "Internet of Things," abbreviated IoT, was born. While the ability to monitor and control home security, temperature and lighting from your cell phone are examples, what this class addresses is what these technologies lend and how we can leverage them to serve the water and wastewater industry - now and in the future.

CEU Relevancy: This class is relevant to the operator because the technologies explored can help municipal operations understand new ways that high speed connectivity, connected devices, the internet and cloud hosted services can prevent water service disruption, water quality improvement, accident avoidance and ensure maintenance with fewer resources and at reduced cost.

Professional Background: BSEE sales engineer from 1990 to present. Knowledgeable about computer, programming, electronics, instrumentation, automation, networking, cyber security and cloud hosting

Primary Knowledge/Skills/Abilities Related to Presentation: Have been providing conference training for 12 years

Education: BSEE

Related Papers/Instruction Given: SCADA in the Cloud, Secure in the Cloud

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: The Top 5 Mistakes Public Agencies Make When Hiring An Engineer

Presenter: Andy Perry **Job Title:** Business Relations Director

Employer: Anderson Perry & Associates, Inc.

Phone #: 5417862473 **Email:** aperry@andersonperry.com

Summary of Lesson Content: This presentation will review common mistakes that public agencies make when hiring an engineer. Items discussed will include developing a good RFP, the pitfalls of asking for price, how to define a good scope, and league requirements often overlooked.

CEU Relevancy: Understanding the items presented will help attendees better plan for their projects, expedite their project timelines, and save their agencies time and money. It will also help attendees better understand how to scope a project to ensure that projects will meet agency requirements and improve a water/wastewater system to protect water sources and public health.

Professional Background: Andy started with Anderson Perry & Associates, Inc. in 2001 and helps to direct client relation efforts, the firm's marketing programs, oversees the Information Technology (IT) team, and GIS team, is a member of the firm's management committee. Andy has a B.S in computer science from Brigham Young University and an M.B.A from the University of Phoenix. Andy is also a licensed FAA Unmanned Aerial System (UAS / Drone) pilot and conducts flights for the firm. Andy regularly competes in triathlons and enjoys spending time in the mountains with his kids.

Primary Knowledge/Skills/Abilities Related to Presentation: Nearly 20 years of experience working with Public Agencies to procure A/E Services

Education: BS, MBA

Professional Registration/Certification:

Related Papers/Instruction Given:

Professional Organizations/Activities: ACEC Oregon / Various Committees

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021

VIRTUAL

Instructor Background & Information

Presentation Title: Land-Based Options for Meeting TMDL Challenges

Presenter: Brian Rabe **Job Title:** Managing Soil Scientist

Employer: Cascade Earth Sciences

Phone #: (541) 812-6639-office or (503) 881-1604-cell **Email:** brian.rabe@valmont.com

Summary of Lesson Content: Surface water discharge requirements are becoming increasingly stringent over time. Total Maximum Daily Loads (TMDL's) guide these requirements. Land-based treatment and reuse options are one way to meet these requirements through partial or total diversion of discharges to storage and/or land application for beneficial use of the water and nutrients.

CEU Relevancy: Each situation is unique in terms of the water quality issues with the receiving water, the volume and characteristics of the discharge, and the local conditions (land availability, potential crops, etc.). This presentation will review many of the factors to consider when assessing options in relation to current and anticipated future requirements. Considerations include treatment levels, storage requirements, crop selection, land requirements, capital and operating costs, among others.

Professional Background: With over 33 years of experience as a soil scientist for CES, Mr. Rabe has extensive expertise in the use of soils as a treatment medium for the maintenance of surface water and groundwater quality. His experience includes designing and monitoring land application programs, encompassing municipal as well as industrial by-products in both solid and liquid forms; and the design of numerous large onsite systems to serve commercial facilities, mobile home parks and residential developments, including assessment of potential impacts upon surface water and groundwater. Other significant experience includes the evaluation of soils for zoning criteria and crop selection, and service as a member of a statewide committee that developed revised rules for the onsite sewage program for Oregon.

Primary Knowledge/Skills/Abilities Related to Presentation: A regional expert in water balances and managing soil-plant systems to protect water quality

Education: BS in Soil Science

Professional Registration/Certification: Certified Professional Soil Scientist and Registered Wastewater Specialist

Related Papers/Instruction Given: Same topic at previous AWWA events (coast, valley, and eastern region)

Professional Organizations/Activities: Oregon Onsite Wastewater Association (former 2-term president, board member, committee chair), Soil Science Society of America, Oregon Society of Soil Scientists (former president and board member), DEQ Techical Review and Rule Advisory Committees

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: Risk Assesment of Underground Vaults

Presenter: Frank Ray **Job Title:** Factory Sales Representative

Employer: EJ

Phone #: 503-550-1828 **Email:** frank.ray@ejco.com

Summary of Lesson Content: This presentation is an informative tutorial. The course will teach the important facts of OSHA Standards when applied to underground utility vaults. At the conclusion of the course, the student will be better equipped to make informed specification decisions as it relates to infrastructure access coverings and ladders used for underground utility vaults

CEU Relevancy: This Presentation is relevant to both Water and Wastewater operators across the United States. It aims to educate the students in identifying Fall hazards and Confined space hazards. They are shown how to be OSHA compliant when it comes to Confined Space permitting. It also shows them engineered solutions to protect from falling into water and wastewater vaults, in addition to proper ladder selection, taking OSHA ladder clearance standards into account.

Professional Background: Have worked with multiple Engineering firms to specify products for use in both water and wastewater infrastructure projects throughout Oregon.

Primary Knowledge/Skills/Abilities Related to Presentation: Have been in the Water/Wastewater industry for 20+ years. Worked with multiple Municipalities and Water/Wastewater districts to help them identify Access Products to use throughout their systems. Product from Manhole Castings to Aluminum Hatches for use on their Meter Vaults and Sanitary Lift Stations.

Education: Boise State University

Related Papers/Instruction Given: Have presented this Segment at numerous conferences

Professional Organizations/Activities: AWWA, OAWU. APWA. Have presented with all these Associations, on both water and wastewater tracts

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: The Science of Polymer Activation

Presenter: Jeff Rhodes **Job Title:** Vice President of Commercial Development

Employer: UGSI Solutions **Phone #:** 970-556-2001 **Email:** grock@ugsicorp.com

Summary of Lesson Content: This 60-minute seminar will provide water system managers, operators and engineers a practical understanding of the science behind polymer and polymer activation as well as the techniques used to optimize the use of polymer in plant settings.

CEU Relevancy: Attendees will understand the basic structure and chemistry of water and wastewater treatment polymers.

Attendees will understand how to use the fundamental science of polymer chemistry to properly activate polymer which leads to better treatment efficiencies and costs.

Primary Knowledge/Skills/Abilities Related to Presentation: Technical specialist in chemical feed applications for the central United States. He maintains over 30 years of experience in chemical feed, analysis and control for water and wastewater treatment processes. Jeff earned his industry experience serving in municipal, industrial and agriculture markets.

Education: Longmont Senior High School (Longmont, CO) Ft. Lewis College (BA in Business Administration) Durango CO

Professional Registration/Certification: Jeff is the co-inventor on three patents in the area of disinfection control and polymer activation.

Related Papers/Instruction Given: Impact of Upgraded Polymer Mix/Feed on Sludge Dewatering, February 2019, CO Rural Water - Impact of Upgraded Polymer Mix/Feed on Sludge Dewatering, April 2019. WEA - Impact of Optimizing Polymer Activation on Sludge Dewatering , May 2019, CSWEA - Optimizing Polymer Mixing and Activation: Following the Science , June 2019, Western Washington Short School & Trade Show - Polymer 101 - Chemistry, Handling and Storage, Dilution Water, Optimized Mixing, October 2019, Intermountain AWWA - Optimizing Polymer Mixing and Activation: Following the Science, August 2020, OR Operators Conference - Polymer 101: Chemistry, Handling, Activation, Optimization, October 2020, WEAU -

Professional Organizations/Activities:

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: Flushing and Sampling for Water Quality and Pipeline Maintenance

Presenter: Geoff Robinson **Job Title:** Territory Manager

Employer: Frank J Martin Company

Phone #: 5036799091 **Email:** geoffr@fjmartin.com

Summary of Lesson Content: Course explores history of drinking water and water quality, water biology, hydrant flushing or spot dead-end flushing, Unidirectional Flushing water modeling, gis, map layers, and related tools. Sampling procedures and chlorine residual requirements are covered in depth.

CEU Relevancy: Flushing and sampling water quality activities are integral to public health and possibly among the largest responsibilities that any drinking water operator will take on in their professional endeavor. A positive outcome not related to public health is that flushing activities assist in managing biofilms and corrosive agents inside the pipe.

Professional Background: attached

Primary Knowledge/Skills/Abilities Related to Presentation: 24 years hands-on instruction experience in Water, Wastewater, Irrigation, and Utility coursework

Education: BA Environmental Scienc, MSC Software Engineering

Professional Registration/Certification: AWWA, OESAC, WSC

Related Papers/Instruction Given: Flushing and Sampling for Water Quality and Pipeline Maintenance

Professional Organizations/Activities: OAWU, PNCWA, PNSAWWA, AWWA, SSE

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: Air Mitigation in Liquid Conveyance Systems

Presenter: Geoff Robinson **Job Title:** Territory Manager

Employer: Frank J Martin Co **Phone #:** 5036799091 **Email:** geoffr@fjmartin.com

Summary of Lesson Content: Participants will understand how entrained air accumulates in systems, as well as understand pipeline behavior during random air intrusion and catastrophic emptying. Participants will be able to associate and recognize common corrosion damage as well as cross-contamination events as air-related phenomena and begin to master management of efficient air mitigation programs. Participants will be able to choose and size air valve types for specific applications.

CEU Relevancy: Considering air and gas occurrence in potable water and wastewater pipeline systems is fundamental to successful realization of optimum pipeline design, performance, and maintenance. Understanding the basic properties of air or gas, and the relationship between air or gas and water in pressurized pipeline systems is necessary for safe and thorough design and operation of such systems. Air and gas, can be skillfully managed with appropriate equipment and maintenance, resulting in maximized safety, efficiency, and overall lower costs of pipeline system ownership.

Professional Background: attached

Primary Knowledge/Skills/Abilities Related to Presentation: Continuing education course author and speaker; 24 years in water industry

Education: BA Environmental Science, MSc Software Engineering

Professional Registration/Certification: OESAC, WSC

Related Papers/Instruction Given: Sampling and Flushing for Water Quality & Pipeline Maint.

Professional Organizations/Activities: OAWU, PNCWA, PNSAWWA, OLCA, O2WA, AWWA, HWEA, IRWA, ERWA

Course Sponsor: Eastern Oregon AWWA/PNCWA

GEOFF **ROBINSON**

18424 Hwy 99, Lynnwood WA 97215 · 503-679-9091
geoffr@fjmartin.com

Enlisted in the US Navy out of high school. Served on a guided missile destroyer in the Pacific Fleet. After the Navy, built airplanes for Lockheed and Boeing. Became involved with water and earned a master's degree in software engineering. Currently investigating quantification of greenhouse gas attributable to public and commercial wastewater, and associated utility agency implications in speculative cap and trade economies.

EXPERIENCE

2010 – PRESENT

TRAINING FACILITATOR, FRANK J MARTIN COMPANY

Continuing education course author and speaker. Primary duties: specification management, utility training support, territory management

WATER, WASTEWATER, IRRIGATION, STORMWATER
OAWU, PNCWA, PNSAWWA, OLCA, O2WA, AWWA, HWEA, IRWA, ERWA

EDUCATION

JUNE 2017

MASTER OF SCIENCE, SOFTWARE ENGINEERING, DEPAUL CDM

Thesis project: IoT edge and cloud gateway applications and supporting hardware for remote gas sensor array

MARCH 2013

BACHELOR OF ARTS, BUILT ENVIRONMENT, DEPAUL UNIVERSITY

Environmental science, water infrastructure, filmmaking, biomedical ethics

SPECIALTIES

- Water system flushing & sampling training
- Water service lateral construction training
- Air impact mitigation in pipeline systems
- Surface and storm drainage design residential/light commercial

ACTIVITIES

Active certification for CEH training in OR and WA: Site drainage design, air mitigation in pressurized pipelines, and water service lateral construction.

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VIRTUAL

Instructor Background & Information

Presentation Title: Metering Selection and Conservation

Presenter: Tammy Rogers **Job Title:** AMR/AMI Specialist

Employer: Ferguson LLC

Phone #: 503-209-4902 **Email:** tammy.rogers@ferguson.com

Summary of Lesson Content: We will discuss the different types of meters and how to choose the correct meter. How does the correct meter impact how water is measured. We will discuss the importance of water conservation and what impact it has on water revenue.

CEU Relevancy: Every water system has meters and should be concerned about conservation. I will help identify the correct meter for the application and help the water operator identify how to be most efficient at collecting all revenue possible by accurately measuring their water.

Professional Background: attached

Primary Knowledge/Skills/Abilities Related to Presentation: AMR/AMI Specialist, Certified WETREC Instructor, 25 years in the industry.

Education: some college

Professional Registration/Certification:

Related Papers/Instruction Given: EORAWWA 8 classes 2002-2019 Water Meters, Evergreen Rural Water various 2010-2020 classes on water meters, Idaho Rural Water Association various water meter classes 2014-2019

Professional Organizations/Activities: Eastern Oregon AWWA, WETREC

Course Sponsor: Eastern Oregon AWWA/PNCWA

Tammy Rogers

Tammy Rogers has 25+ years in the water industry. Tammy has worked in various capacities in the water industry; Plumbing Show Room as a Design Specialist and Commercial Estimator for Keller Supply, Project Manager for Wolcott Plumbing, Commercial Estimator Mechanical Agents, Municipal Sales Specialist and AMR/AMI Specialist United Pipe and Supply. In 2012 Tammy joined the Ferguson Metering and Automation Group as an AMR/AMI Specialist. For Tammy all paths lead to water. Tammy is dedicated to her customers and providing opportunities to fit their needs. Tammy strongly believes every customer deserves the opportunity technology can offer although that technology may be different for everyone there is a solution for all. Tammy covers Central & Eastern Washington, Northern Idaho and North East Oregon providing Automated Meter solutions. Tammy serves on the Eastern Oregon AWWA committee and supports Evergreen Rural Water, Idaho Rural Water, WETREC, WASWD, and WOW. She is a Certified Educator with WETREC providing education at various conferences for Continuing Education Units (CEU's). Tammy has successfully led several AMI projects including: Gresham Oregon, La Grande Oregon, Walla Walla, Wa and College Place Wa. Born and raised in Othello, Tammy has strong roots in the Columbia Basin

2021 Eastern Oregon Operators Conference

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VIRTUAL

Instructor Background & Information

Presentation Title: Principles of Backflow Prevention and Pressure Regulation

Presenter: Rebecca Slabaugh **Job Title:** Regional Sales Manager

Employer: Mechanical Agents

Phone #: 5035725336 **Email:** becky@mechagents.com

Summary of Lesson Content: An overview of the need for Backflow Prevention and Pressure Regulation. An Overview of the different types and applications to fit different system needs.

CEU Relevancy: An overview of the need for Backflow Prevention and Pressure Regulation. An Overview of the different types and applications to fit different system needs.

Primary Knowledge/Skills/Abilities Related to Presentation: Manufacturer Rep for Backflow and Pressure Regulation for 24 years

Education: Bachelor of Arts - Business

Professional Registration/Certification:

Related Papers/Instruction Given:

Professional Organizations/Activities: AWWA, ABPA, Oregon State Cross Connection Advisory Board,

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: Pressure Pipes

Presenter: Lucas Stangel **Job Title:** Project Engineer

Employer: Anderson Perry & Associates, Inc.

Phone #: 541-963-8309 **Email:** bmahon@andersonperry.com

Summary of Lesson Content: This presentation will provide an overview of various types, materials and pressure classifications for pipe used in typical municipal systems. Material options for both water and wastewater piping, and applicability will be discussed. Also, how pipe type choices can impact other materials such as fittings, valves and restraint.

CEU Relevancy: This presentation will give operators the knowledge to understand differing pipe types, what the application for each pipe type is, and how to apply that knowledge in the field. Understanding the different pipe material types and how they impact other components of municipal systems will help reduce failures due to improper material ordering. An overview of ancillary components such as valves and restraint devices will also give operators the ability to modify existing infrastructure, and provide the appropriate materials for restraint without damaging the existing piping.

Professional Background: Attached

Primary Knowledge/Skills/Abilities Related to Presentation: Project engineer on multiple, large scale water supply systems. Projects included large pumping stations, as well as large diameter pressure pipes.

Education: Enterprise High School, Oregon State University - B.S. Civil Engineering

Professional Registration/Certification: Professional Engineer (P.E.)

Related Papers/Instruction Given:

Professional Organizations/Activities:

Course Sponsor: Eastern Oregon AWWA/PNCWA

Lucas Stangel, P.E.

Project Engineer - Transmission Line Booster Pump Station - Ice Fountain Water District

Provided design and construction engineering services to install a new booster pump station on the transmission line from the Ice Fountain spring including a concrete masonry unit building, site work, and station and site piping. Once installed, the booster pump station allowed the Ice Fountain Water District to certify their 3 cfs water right.

Project Engineer - West Industrial Area Utility Extension Improvements - City of Joseph, OR

Provided design and construction engineering services to extend water and sewer utilities to the existing industrial-zoned land in the northwest area of the City.

Project Engineer - Eastside Lateral Improvements - East Fork Irrigation District

Provided design services for replacing an existing 29,000-foot-long irrigation ditch with 42 inch to 18 inch pressurized pipeline. The project reduces water loss along the ditch, provides pressurized water for irrigators, and reduces the amount of water required to be diverted from the river.

Project Engineer - Boardman Irrigation System Pump Stations and Pipeline Evaluation - Columbia Improvement District

Prepared a study to evaluate improvement alternatives for the existing system to help meet required operational needs; reduce power costs and operational and maintenance costs; mitigate drawing air into the river pumps; increase the flow capacity from 140,000 gpm to 180,000 gpm; and mitigate conditions at the freeway crossing that have caused pipeline damage.

Project Engineer - Irrigation System Improvements - Columbia Improvement District

Provided design engineering and construction engineering services for improvements including adding two 8-foot diameter by 30-foot-long air burst fish screens on the Columbia River, six new 31,000 gpm pumps at the river pump station, 15 new 9,000 gpm pumps and three new 17,350 gpm pumps with electrical gear at Booster Pump Station No. 1, and 15 new 14,150 gpm pumps with new electrical gear at Booster Pump Station No. 2. The project also included approximately 4 miles of 72-inch diameter and 3 miles of 75-inch diameter fiberglass pressure pipeline.

Project Engineer - Canal Capacity Improvements - Columbia Improvement District

Designed improvements to the Districts concrete lined canal that delivers water to individual users. Work included raising 19,750 feet of concrete lined canal, raising three pump stations, and three pump station intake structures.

Project Engineer - Water System Improvements - City of Vale, OR

Provided design engineering services for this project that included constructing a new coagulation filtration arsenic treatment facility, upgrading the existing Washington Street Well pump station, installing a new transmission line from the Washington Street Well pump station to the new arsenic treatment facility, and replacing the existing Airport Reservoir with a new 700,000-gallon water storage reservoir.

EDUCATION

B.S., Mechanical Engineering, Oregon State University

PROFESSIONAL REGISTRATION

Professional Engineer – Oregon

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VIRTUAL

Instructor Background & Information

Presentation Title: Kenosha Wastewater Solids Process Energy Optimization and Recovery Recovery Case Study

Presenter: Jerod Swanson **Job Title:** Western Regional Sales Manager

Employer: Centrisys **Phone #:** 6124012006 **Email:** Jerod.swanson@centrisys.us

Summary of Lesson Content: This presentations steps through the benefits of implementing advanced thickening, dewatering, Thermochemical Hydrolysis, and biosolids drying.

CEU Relevancy: This presentations steps through the benefits of implementing advanced thickening, dewatering, Thermochemical Hydrolysis, and biosolids drying. This information can be utilized by operators to optimize their solids treatment, reduce biosolids handling costs and optimize digestion.

Professional Background: More than twenty-five (25) years of engineering and technical sales experience in the water and wastewater industry, as well as other related industries. Joined Centrisys in 2014 as a Regional Sales Manager with previous roles including Industrial Regional Sales Manager and Commercial Leader at Parkson Corporation, International Sales Manager at Aeration Industries, as well as technical and sales roles with Pentair and GE Plastics/Sabic. Jerod also served as a Navy Nuclear Engineering Officer for five (5) years prior to entering the private sector. Bachelor's degree in Mechanical Engineering and an MBA, both from the University of Minnesota.

Primary Knowledge/Skills/Abilities Related to Presentation: More than twenty-five (25) years of engineering and technical sales experience in the water and wastewater industry, as well as other related industries.

Education: B.S. Mechanical Engineering, MBA both from U of MN

Professional Registration/Certification: EIT

Related Papers/Instruction Given: Too many to count

Professional Organizations/Activities:

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: What's New in Lagoon Aeration Systems, is there a better way?

Presenter: Lewis Titus **Job Title:** Vice President

Employer: Titus Industrial Group Inc. **Phone #:** 5419484458 **Email:** lewis@titusig.com

Summary of Lesson Content: We will review current methods of Lagoon management, and take a look at some NEW technology. Reducing energy costs, maintenance costs, Sludge, Odors, Algae, and maintaining proper DO levels. Keep your Lagoons Healthy!!

CEU Relevancy: We will be discussing how using new and innovative aeration/mixing systems can be used to improve the health and function of all types of ponds, and lagoons. Wastewater, Storm water, raw water supply lagoons, industrial lagoons, Agra-cultural lagoons and more. There will be a focus on reducing energy costs and eliminating the use of toxic chemicals.

Professional Background: 20 Years experience in the the Water & Wastewater industry including collections systems, and lagoons.

Primary Knowledge/Skills/Abilities Related to Presentation: 10 years experience in Lagoon, and Pump Station Aeration Systems. I developed and Patented the TITUS Twister FL Series Floating Aerator, and the TITUS Twister for Pump and Lift Stations.

Education: Collage LCC/ 2 year Millwright Apprenticeship/ 3 year Apprenticeship Pacific Gas and Electric Gas Transmission

Related Papers/Instruction Given: 2016 OAWU Hood River Conference, Non-Centralized WW Treatment, Dec. 7: 2017 APWA Street Maintenance & Collection Systems Spring School, 3 classes. Non-Centralized WW Treatment. Building a Better Manhole. How to Install a Manhole Frame & Cover. 3/29/17: 2018 Tri-State Conference (Calif, Nev, AZ) Las Vegas NV. 2 Classes. How to build a better Manhole, Non-Centralized WW Treatment. Sept. 25 -27 2018: 2018 APWA Street Maintenance & Collection Systems Spring Short School. 2 classes. Building a Better Manhole. Non-Centralized WW Treatment. 3/7/2018: 2018 OAWU Hood River Conference. Non-Centralized WWT. 12/5/2018: 2019 OAWU Fall Operators Conference Florence Oregon, Chemical Free Odor & Fog Control, Oct. 8th 2019:

Professional Organizations/Activities: CWEA, OAWU, APWA

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: Real World Considerations for pump design, operation and troubleshooting

Presenter: Steve Truitt **Job Title:** Regional Manager

Employer: Penn Valley Pump Co **Phone #:** 8473408917 **Email:** struitt@pennvalleypump.com

Summary of Lesson Content: We will discuss various aspects of pump design which can be used by consulting engineers as well as plant staff. Topics include piping and supports, gauges, switches, suction lift, TDH, NPSH, cavitation and when to use centrifugal versus positive displacement pumps. We will also discuss pump operation and maintenance. Pump troubleshooting will also be covered including tools the plant should have as well as common causes and remedies of pump issues. This information comes from lessons learned during 31+ years of work in the water and wastewater industry.

CEU Relevancy: We will discuss various aspects of pump design which can be used by consulting engineers as well as plant staff. Topics include piping and supports, gauges, switches, suction lift, TDH, NPSH, cavitation and when to use centrifugal versus positive displacement pumps. We will also discuss pump operation and maintenance. Pump troubleshooting will also be covered including tools the plant should have as well as common causes and remedies of pump issues. This information comes from lessons learned during 31+ years of work in the water and wastewater industry.

Professional Background: I have a BS in Civil Eng from University of Illinois. Registered PE in IL and CO. 31 years of experience in the water and wastewater equipment industry.

Primary Knowledge/Skills/Abilities Related to Presentation: Design, operation and troubleshooting for all types of pumps

Education: BS Civil Engineering

Professional Registration/Certification: Professional Engineer in IL and CO

Related Papers/Instruction Given: I have given this presentation and others at many other State shows over the past 30 years.

Professional Organizations/Activities: WEFTEC, AWWA, ASCE

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: Hydraulic Control Valve Training

Presenter: Mike Uthe **Job Title:** Northwest Area Manager

Employer: Mueller Water Products

Phone #: 406-223-2192 **Email:** muthe@muellerwp.com

Summary of Lesson Content: Singer control valves have been manufactured for over 60 years, and were recently purchased by Mueller. Control valves can help provide data about the water system to utilities and diminish non-revenue water. I will discuss the hydraulic fundamentals of these valves, basics of a pilot system and diverse valve/pilot set up solutions to help control and protect your water system assets. Reviewed in this presentation will be valves ranging from ½" to 48", rolling diaphragm for low flow stability, space saving in vaults, and integral back-up valves for critical regions of a water system. Lastly, we will delve into advanced pilot systems, cavitation within valves, choosing the right valve, and common maintenance techniques.

CEU Relevancy: Hydraulic control valves are present in almost every potable water system. They are an integral piece of equipment that is owned by the utility and should be understood by operators and owners. By the end of this presentation operators will be able to correctly identify the right control valve for a situation. Understand the basics of a hydraulic control valve. Discover the correlation between non-revenue water and pressure management through control valves. And learn startup and maintenance techniques.

Professional Background: I cover WA, OR, ID, WY, MT, UT, CO, and AK for the water management solutions team. Our goal is to help municipalities and utilities provide clean water to their customers with minimal losses. I handle Echologics, Singer Valve, and Hydro-Guard product lines. I am also working toward a graduate degree in Mechanical Engineering. Prior to this I was in a technical sales role for Advanced Pump and Equipment. There I sold and designed a variety of engineered water and wastewater systems in the Northwest US. Before this I worked as a field engineer in the Bakken for ONEOK. In this position I was responsible for field work on pipeline and compressor stations as well as process engineering in refining plants. Prior to that I was with Chevron. Here I gained experience on daily management of oil rigs in

California, and field management in Texas. My undergraduate degree is in Petroleum Engineering.

Primary Knowledge/Skills/Abilities Related to Presentation: Six years working in the water industry with a focus on equipment and hydraulics.

Education: Master of Engineering in Mechanical Engineering. Bachelor of Engineering in Petroleum Engineering

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: Leak Detection and the Battle against Non-Revenue Water

Presenter: Mike Uthe **Job Title:** Northwest Area Manager

Employer: Mueller Water Products

Phone #: 406-223-2192 **Email:** muthe@muellerwp.com

Summary of Lesson Content: Non-revenue water accounts for 20-30% of an average utilities' potable water supply. There have been recent advancements in technology that allow for real time monitoring of pipelines for breaks as well as improved acoustic correlators that allow a utility to locate these leaks before they become catastrophic. I will train the audience on the use of a correlator for leak detection and then explain how this same principle is used for permanent leak monitoring. I will conclude with how we can use this technology for pipeline condition assessments.

CEU Relevancy: This presentation will focus on how technology can be used to help support a utilities asset management program and better utilize their resources by prioritizing leak detection programs. Operators that come to this presentation will gain valuable knowledge on the many uses of acoustic correlators and how to identify issues before they become an emergency. This presentation is focused on operations being proactive with pressure management and condition assessment to avoid reacting to emergencies.

Professional Background: I cover WA, OR, ID, WY, MT, UT, CO, and AK for the water management solutions team. Our goal is to help municipalities and utilities provide clean water to their customers with minimal losses. I handle Echologics, Singer Valve, and Hydro-Guard product lines. I am also working toward a graduate degree in Mechanical Engineering. Prior to this I was in a technical sales role for Advanced Pump and Equipment. There I sold and designed a variety of engineered water and wastewater systems in the Northwest US. Before this I worked as a field engineer in the Bakken for ONEOK. In this position I was responsible for field work on pipeline and compressor stations as well as process engineering in refining plants. Prior to that I was with Chevron. Here I gained experience on daily management of oil rigs in California, and field management in Texas. My undergraduate degree is in Petroleum Engineering.

Primary Knowledge/Skills/Abilities Related to Presentation: I have spent the last 5 years working in municipal water as a technical resource for utilities and engineers. My expertise covers asset management, data collection, and water loss prevention. I have been a technical resource for Mueller for the past year.

Education: Bachelor's in Petroleum Engineering and Minor in Business Management

Related Papers/Instruction Given: 12/4/2019 Leak detection training for Montana Rural Water. 1/11/2020 Leak detection training for Colorado rural water

Course Sponsor: Eastern Oregon AWWA/PNCWA

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VIRTUAL

Instructor Background & Information

Presentation Title: How to Make Better "Smarter" Pressure Reducing Stations

Presenter: Robert Velasquez **Job Title:** Water Management Consultant

Employer: Cimco-GC Systems

Phone #: 2533539620 **Email:** robert@cimco-gcsystems.com

Summary of Lesson Content: This course will cover design, maintenance, and smart technology features to get the most out of control valve stations. Topics include essential elements for pressure reducing stations including pressure reducing and pressure relief control valves, options to increase the lifetime of control valves, options to add smart technology to control valves, and common applications for advanced electronic control valves.

CEU Relevancy: Control valves are an essential part of water and wastewater systems, especially pressure reducing and pressure relief. This class will cover how these valves work together to control and protect systems, as well as the options available to get the most out of a systems valves.

Professional Background: Based in Western Washington, Robert Velasquez trains and consults engineers and water districts across the Pacific Northwest. Over the last several years he has conducted dozens of trainings from maintenance to system design, and enjoys developing new presentations on pressing topics such as electronic controls, building redundancy in water stations, and how control valves can help improve water quality. He has conducted accredited trainings with the PNWS-AWWA, ERWOW, and OAWU organizations.

Primary Knowledge/Skills/Abilities Related to Presentation: Maintenance, design, and consult control valves

Education: Bachelors in Business Administration from the University of Washington

Related Papers/Instruction Given: Control Valve Operators Course, December 9 2020, PNW-AWWA Training

Professional Organizations/Activities: Evergreen Rural Water Association, Idaho Rural Water Association, AWWA

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Control Valve Hydraulics, Operation, and Maintenance

Presenter: Robert Velasquez **Job Title:** Water Management Consultant

Employer: Cimco-GC Systems

Phone #: 2533539620 **Email:** robert@cimco-gcsystems.com

Summary of Lesson Content: This course will discuss the hydraulics, operation, application, and recommended maintenance of automatic diaphragm actuated control valves.

CEU Relevancy: Control valves serve a critical role in water systems balancing pressures, flows, tank levels, pumps, and water quality. This course will cover how control valves work and how to maintain them to equip operators to care for their water systems.

Professional Background: Based in Western Washington, Robert Velasquez trains and consults engineers and water districts across the Pacific Northwest. Over the last several years he has conducted dozens of trainings from maintenance to system design, and enjoys developing new presentations on pressing topics such as electronic controls, building redundancy in water stations, as well as assisting engineers design and select valves and pumps. He has conducted accredited trainings with the PNWS-AWWA, ERWOW, IRWA, and OAWU organizations.

Primary Knowledge/Skills/Abilities Related to Presentation: Experience maintaining, troubleshooting, training, and supporting engineers on design with Automatic Control Valves

Education: Bachelors Degree in Business Administration

Professional Registration/Certification: Factory Trained on Control valves

Related Papers/Instruction Given: Control Valve Operator Course, December 8, 2020, 8 hour training with PNW-AWWA.

Professional Organizations/Activities: Evergreen Rural Water, Idaho Rural Water, and American Waterworks Associations

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Corrosion Protection 101: Controlling Corrosion with Coatings

Presenter: Ron Watts **Job Title:** Technical Sales Protective Coatings

Employer: PPG **Phone #:** 541-221-7017 **Email:** rwatts@ppg.com

Summary of Lesson Content: Common Issues in Water and Wastewater Operations and How to mitigate and Control with Protective Coatings. Agenda:· Service Environment – Assessing and Identifying, □ Developing Plans/Systems for Corrosion Control □ Preparation, O Material choice to balance timeline, service life, and financial objectives · Common Corrosion Issues - Examples and Steps to Control

CEU Relevancy: Maintaining Assets

Professional Background: 35 years plus Industry Experience (began as laborer, application, estimating, project management, contracting, sales, technical services

Primary Knowledge/Skills/Abilities Related to Presentation: Protective Coating Specialist, Training Specialist, Key Account Manager

Education: AS Business Administration, College Studies: Engineering, Business, Psychology

Professional Registration/Certification: SSPC Master Coating Inspector # 41, NACE Certified Coating Inspector Level 3 #22860, SSPC Protective Coating Specialist 205-101, SSPC Concrete Coating Inspector #47662

Related Papers/Instruction Given: Protective Coatings and Linings Projects: Keys to Success, Protective Coatings and Linings for Water and Wastewater Treatment Plants: Key Products, Systems and Selection, Preparing and Painting Galvanized Steel – Best Practices, Basics of Corrosion in Atmospheric Conditions, Protective Coatings: Technological Advances, Principles of Corrosion, Surface preparation, and Coatings Basics, New Developments in Coatings Options for Manufacturers, Corrosion and Coatings Training – Corrosion Basics, Shop Applications “Body of Knowledge” Training, Integrating Quality Checkpoints into Daily Processes, Plus Many more

Professional Organizations/Activities: NACE International (now AMPP) Coating Inspector Program Instructor, SSPC (Now AMPP) Education Committee; NACE Portland Oregon Section Vice Chair (Formerly Chair);

Course Sponsor: Eastern Oregon AWWA/PNCWA

2021 Eastern Oregon Operators Conference

March 29 – 31, 2021
VIRTUAL

Instructor Background & Information

Presentation Title: Lead and Copper Rule Revision 2021

Presenter: Amy Word **Job Title:** Natural Resource Specialist

Employer: State of Oregon - Drinking Water Services

Phone #: 541-966-0901 **Email:** amelia.a.word@state.or.us

Summary of Lesson Content: This presentation will review the newly released lead and copper rule. There are several components that will directly affect water systems and their operations. The presentation will also compare the current lead and copper rule with the new rule.

CEU Relevancy: This presentation is relevant to drinking water systems and operators as there will be new procedures, monitoring and required water/service line documentation that will be needing to be submitted to the drinking water program. This presentation serves as a heads up until the new rule is adopted by the State of Oregon.

Primary Knowledge/Skills/Abilities Related to Presentation: Have been employed with the drinking water program since 2008

Education: BS Biology

Professional Registration/Certification: Registered Environmental Health Specialist

Related Papers/Instruction Given: Lead and Copper Update 2016 (OHA/DWS Silver Falls)

Professional Organizations/Activities: National Environmental Health Association

Course Sponsor: Eastern Oregon AWWA/PNCWA