

# Registration Form

**January 25, 2023**

#7499 - Wastewater System Math Refresher  
#8549 - Food/Microorganism Ratio (F/M) and Mean Cell Residence Time

**Location:**  
**Doubletree Pittsburgh  
Meadow Lands**  
340 Racetrack Road  
Washington, PA 15301  
Washington County

*One Registration per person please!*

**Please provide the best contact information in case of class cancellation or changes.**

Attendee Name: \_\_\_\_\_

PA DEP Client ID (if applicable): \_\_\_\_\_ Attendee E-Mail: \_\_\_\_\_

System/Company: \_\_\_\_\_

Attendee Cell Phone: (     ) \_\_\_\_\_ Fax: (     ) \_\_\_\_\_

Address:  Home  
 System/Company \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

## **PAYMENT:**

Check (payable to PRWA)

**PRWA Member?**  Yes  No

Invoice Me:  Home  System/Company

**Attendance cost per person:**  
\$115 for PRWA Members  
\$150 for Non-Members

Amount Due:  
\$ \_\_\_\_\_

**For security reasons, all credit card transactions must be processed through our website.**

**If you prefer to pay via credit card, please visit [www.prwa.com](http://www.prwa.com).**

## **THE PRWA PROMISE**

If you're not 100% satisfied with the training class for any reason, we will give you a refund!

**WWW.PRWA.COM/PROMISE**

**To register by FAX or MAIL:**

**FAX:** (814) 353-9341

**MAIL:** 138 W. Bishop St., Bellefonte PA 16823

**EMAIL:** TRAINING@PRWA.COM

EMAILING REGISTRATIONS: EMAIL IS INHERENTLY INSECURE. CREDIT CARD INFORMATION SHOULD NOT BE EMAILED OR SEND IN AN ATTACHMENT.

## **Questions?**

Call (800) 653-7792 ext. 107 or 108

## **#7499 Wastewater System Math Refresher &**

## **#8549 Food/Microorganism Ratio (F/M) and Mean Cell Residence Time**

### **5 WASTEWATER CONTACT HOURS**

**Wastewater System Math Refresher:** Wastewater operators are required to complete math calculation to assist in operations. This course will review some of the math required to operate a wastewater system.

**Food/Microorganism Ratio (F/M) and Mean Cell Residence Time:** An activated sludge treatment system is a living ecosystem and requires special care to ensure that the organisms are healthy and provided with the proper environment for them to flourish. There are many factors that can have an effect on the efficiency and overall operations of an activated sludge treatment plant and there are many operational adjustments that need to be made on a daily basis to keep the system running at its best. Two calculations that are often used to determine those adjustments are food/microorganism (F/M) ratio and mean cell residence time (MCRT).

### **Topics to be covered:**

- Converting Flows Velocity of Flow Pumping Unit
- Process Efficiency BOD/Suspended Solids Removed
- Food I Microorganism Ratio
- Mean Cell Residence

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**Class Time:** 8:00 am - 2:30 pm  
**Registration:** 7:30 am

*Lunch and materials provided with your  
registration*



**Instructor:  
Tom Goehring**

*Wastewater Technician*

Tom is a Wastewater Training Specialist. Tom started in the wastewater field in 1994 performing plant operations, laboratory DMR and process control testing, and collection system management until 2008. He then began work with the State of West Virginia assisting utilities with proper managerial and financial procedures until he returned to Pennsylvania and joined PRWA as a wastewater technician in 2013. He currently holds a Class A wastewater license in Pennsylvania and a Class IV wastewater license in West Virginia.

**pa rural water**  
*Association*

138 West Bishop Street  
Bellefonte, PA 16823  
800-653-7792

[WWW.PRWA.COM](http://WWW.PRWA.COM)

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