

2018 FILAMENT ID SCHOOL

Fort Collins, CO is conveniently located: fly into Denver International Airport and rent a car or take the shuttle (www.greenrideco.com) to drive 60 minutes north; it's also only an hour from downtown Denver, Estes Park, Rocky Mountain National Park, Boulder, and fly fishing on the Poudre River. For more information about Fort Collins, see www.visitfortcollins.com and www.fcgov.com/visitor/ . Reserve your lodging early (and reserve early for New Belgium Brewery tours – home of *Fat Tire*).

1. Filament Identification

Monday- Wednesday: August 6-8, 2018

Dr. Michael Richard and Rick Marshall, PE will provide 3-days of hands-on training in microscopic identification and assessment of activated sludge and aerated stabilization basin sludges. The course offers extensive hands-on lab time with phase-contrast microscopes with highest quality Olympus phase-contrast microscopes. **This is the premier wastewater microbiology class - no one else offers a class like this!**

Each participant will get to use their own phase-contrast microscope without sharing (no you can't take this home afterwards).

Students will learn and apply the proper techniques in assessing floc characteristics, staining and identifying filamentous bacteria. Students will utilize bench sheets to summarize results of their examinations. Samples containing the commonly found filamentous bacteria will be analyzed during the workshop. Participants are encouraged to bring their own samples to analyze as well.

Hands-on training will help you identify problems and troubleshoot your system. Dr. Richard will present the lecture sections of the course will cover the microbiology of activated sludge and ASBs; microbiological problems that occur; and practical control measures. Rick Marshall will present the latest findings in troubleshooting and controlling filaments.

Course Outline:

- Microbiology overview, microbiological problems and control measures
- Lab: microscope use; good and problem sludges
- Lab: filament identification techniques
- Lab: review of participant samples; demos
- Lab: microorganism identification with samples

Participants will receive 1) *The Manual on the Causes and Control of Activated Sludge Bulking and Foaming and Other Solids Separation Problems*, 2) *Industrial Activated Sludge Operations* manual by Richard Marshall, P.E., and 3) Activated sludge Microbiology poster.

Registration Fee: \$1,300 USD (Note: Deduct \$70 if bringing your own copy of The Manual)

Register at www.metcgroup.com

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2. Advanced Filament Identification

Thursday & Friday: August 9-10, 2018, Fort Collins, CO

This is the only advanced filament ID class in North America, given by a premier authority in the field, where you get the chance to see all of the major filaments! Hopefully you do not get to see them in your sample at the same time!

Each participant will get to use their own phase-contrast microscope without sharing (no you can't take this home afterwards).

Dr. Michael Richard and Rick Marshall, P.E. will provide hands-on training in microscopic examination of activated sludge/aerated stabilization basin sludges. All of the twenty major filamentous bacteria will be available for identification by the participants. Students will learn and apply the proper techniques in assessing floc characteristics, staining and identifying filamentous bacteria. Participants should bring their own sludges to analyze.

As a course prerequisite, students must have completed the basic Filament Identification workshop and have treatment plant operating experience. The prerequisite may be waived by instructor permission.

Participants will receive 1) *The Manual on the Causes and Control of Activated Sludge Bulking and Foaming and Other Solids Separation Problems*, 2) *Industrial Activated Sludge Operations* manual by Richard Marshall P.E., and 3) Activated sludge Microbiology poster.

Registration Fee: \$1,100 USD (Note: Deduct \$70 if bringing your own copy of The Manual)

Register at www.metcgroup.com

Location for both classes:

**First United Methodist Church
Village Commons meeting room
1005 Stover Street
Fort Collins CO 80524**

Convenient parking and access to classroom by elevator or stairs at the south entrance of the church. The parking lots are accessible from Stover or Edwards Streets.

The only proselytizing will be promoting the value of microbiological analysis!