Course Sponsorship

Provided by the
Water Pollution Control State Revolving Fund (WPCSRF) and the
Compliance, Training and Technical Assistance (CTTA) programs at the
Montana Department of Environmental Quality
in cooperation with the
Montana Environmental Training Center (METC)
and the
Montana Water Environment Association (MWEA)

Course Instructor

Grant Weaver is president of CleanWaterOps, formerly The Water Planet Company.

He has completed Post-Graduate Studies in Environmental Technology at MIT (Massachusetts Institute of Technology). Grant has a Master o Science Degree in Bio-Environmental Engineering from Oklahoma State and a Bachelor of Science in Biology from Kansas State. He is a licensed Professional Engineer and holds top wastewater operator licensing in multiple states. Grant participated in the writing of the Water Environment Federation's *Nutrient Roadmap* and WEF's *Operation of Nutrient Removal Facilities Manual*. He has also been author of numerous trade journal articles and presenter/lecturer at meetings and conferences across the country.

Grant is a native of Kansas and now lives in Connecticut. This is his seventh year presenting in Montana.

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MSU-Northern
P.O. Box 7751
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Montana Environmental Training Center

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Montana Water Environment Association

Presents

Optimization of Mechanical Wastewater Plants

June 4 - 5, 2019

Helena, Montana

Optimizing Mechanical Wastewater Plants

Montana Environmental Training Center

Helena

June 4 – 5, 2019

WHERE: UM Helena College
1115 N. Roberts

COURSE FEE: None

CECs: up to 1.4 Wastewater

WHAT: You will learn how to remove nutrients by re-engineering wastewater operation and maintenance practices in various types of mechanical wastewater treatment plants through improving existing treatment processes. In turn, saving your system money & reducing the your system's carbon footprint.

AGENDA

Tuesday, June 4, 2019

7:30 - 8:00 AM Registration

8:00am Introduction to Montana Water Quality Effluent Limits – N and P Nutrients
Basics of Nitrogen Removal
Creating the right habitats for biological N-removal – what makes the bugs happy?
Basic science – what is N-removal?

Break 10-10:15am
Basic design theory practices – how do the MLE and other processes work?
Case Studies: Municipal wastewater treatment plants that are being operated differently than designed to optimize Nitrogen removal

Lunch 12-1pm
1:00pm Brainstorming Sessions: Opportunities for Improving Nitrogen Removal by Changing the Day-to-Day Operations of the participant's treatment plant
***Participants interested in ideas on how to possibly modify their plants to improve nutrient removal should bring the following information:** Plant schematic /Tank volumes (gallons) /Typical flow rates (GPD or MGD) Influent-Effluent/ Recycle Flows/ Side streams /influent-primary effluent-final effluent data (mg/L) BOD; TSS; pH; Alkalinity, Nitrogen – TKN; Ammonia-N; Nitrite-N/ Nitrate-N ; Total Nitrogen, Permit limits/concerns

Break 3:00-3:15pm
3:15 Nitrogen Removal Brainstorming Sessions (Continued).
5:00pm End

Wednesday, June 5, 2019

8:00am Basics of Phosphorus Removal—Creating the right habitats for biological P-Removal—What do the bugs need?
Basic Science—What is P-Removal?

Break 10:00-10:15
10:15 Basic design theory practices—how do plants biologically and chemically remove Phosphorus?
Case Studies: Municipal wastewater treatment plants that are being operated differently than designed to optimize Phosphorus removal

Lunch 12:00-1:00pm
1:00pm Brainstorming Sessions: Opportunities for Improving Phosphorus Removal by Changing the Day-to-Day Operations of the participant's treatment plants.
***Participants interested in ideas on how to possibly modify their plants to improve nutrient removal should bring the following information:** Plant schematic /Tank volumes (gallons) /Typical flow rates (GPD or MGD) Influent-Effluent/ Recycle Flows/ Side streams /influent-primary effluent-final effluent data (mg/L) BOD; TSS; pH; Alkalinity, Phosphorus – ortho-Phosphorus and/or total-Phosphorus, Permit limits/concerns
3:00pm End

REGISTRATION FORM
Optimizing Mechanical Wastewater Plants
Helena
June 4 - 5, 2019

REGISTRATION: Even though there is no charge registration is **necessary!** Please complete this form and return it to METC. We must know how many to plan for.

Mail Registration to:
METC
MSU-Northern
P. O. Box 7751
Havre, MT 59501

NAME_____

ADDRESS_____

CITY_____

ST _____ ZIP_____

PHONE_____

EMPLOYER_____

E-MAIL _____