



WATER ENVIRONMENT ASSOCIATION OF TEXAS

Preserving & Enhancing the Water Environment of Texas

*****FREE WEAT WEBINAR WEDNESDAY**

***HOW DO I KNOW I'M MAKING THE RIGHT DECISIONS IN OPERATING
MY PLANT NOW AND IN THE FUTURE?***

***HOW BIOLOGICAL PROCESS MODELING SERVES AS A TOOL FOR
OPERATIONAL DECISION MAKING, OPTIMIZATION, AND TRAINING.***

12noon – 1pm, Wednesday, September 14, 2016

Presentation Title: How do I know I'm making the right decisions in operating my plant now and in the future? How biological process modeling serves as a tool for operational decision making, optimization, and training

Presenter: P.S. Arora, PE, Assistant Director Wastewater Utilities, City of Denton and Brandt Miller, PE, Hazen and Sawyer

Presenter(s) bio(s):

P. S. Arora, P.E. is responsible for Denton's Wastewater Utilities which includes environmental compliance, wastewater collection and treatment, beneficial reuse, capital projects planning, short and long range forecasts, rates, impact fees and utility budget.

Brandt Miller serves as the wastewater process lead for Texas and the surrounding states at Hazen and Sawyer. He graduated from The University of Texas at Austin with a Bachelor of Science in Civil Engineering and has more than eight years of experience in the municipal water and wastewater industry.

Presentation Overview/Synopsis:

This webinar will provide an overview of how a biological process model is calibrated and leveraged for optimization and planning purposes. The case study discussed focused on the City of Denton (Denton) Pecan Creek WRP (PCWRP) rated for an average annual flow of 21 million gallons per day (mgd) and peak 2-hour flow of 46-mgd. PCWRP recently received more stringent nutrient limits in their Texas Pollutant Discharge Elimination System (TPDES) permit, including <0.5 mg/L total phosphorus. In order



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to manage the more stringent discharge permit limits and challenges of two plants on one site, the City of Denton recognized an opportunity to improve operator confidence and process control by developing an operations and evaluation tool. Hazen and Sawyer (Hazen) assisted Denton in developing a calibrated process model using BioWin 4 (developed by EnviroSim Associates, Ltd.) software to serve as the operations and evaluation tool. The goal of the operations tool is to assist in process decisions such as:

- Aeration strategies and optimization
- Wasting strategies and impacts to sludge production
- Seasonal operations targets (solids retention time, mixed liquor suspended solids, etc.)
- Response to process upsets (loss of clarifier removal efficiency, solids processing upsets, etc.)
- Maintaining operation during construction, taking basins off line
- Wet weather flow management
- Construction sequence impacts

Area of Interest: Wastewater treatment plant operation and optimization

Presentation Questions:

- Name some operational and/or planning questions that a biological process model can be leveraged to answer.
- What fractions are developed from supplemental sampling?
- Can nitrate in the return activated sludge limit enhanced biological phosphorus removal?

***** Please note this is a Free WEAT Webinar to WEAT members only. All non-member attendees will be invoiced \$50 for a WEAT membership.**