

€ TRAINING

Maintenance and operation of water plants



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Introduction:

This is a course about how to operate a wastewater treatment plant. It will address the basics of O&M, plus how to control the plant operations.

Course Objectives:

At the end of this course, the participants will be able to:

- Obtain knowledge on operation and maintenance of wastewater treatment plants
- Operate and maintain wastewater treatment plants and the associated equipment
- Understand the requirements of preventive maintenance in wastewater treatment plants

Targeted Audience:

This course is intended for waste-water treatment plant personnel, supervisors, laboratory personnel, and plant operators and technicians.

Course Outlines:

Unit 1:

- Introduction
- Pre-Test
- Wastewater Treatment Plant Basics & Types of Plants
- What you can control & what you have to live with
- Elements of a Plant
- Flow Measurements
- Flow Characteristics - is it already anaerobic?
- Screening
- Grit Removal
- Sedimentation
- Aeration
- Pumps and Pumping
- Clarifiers
- Filters
- Membranes
- Disinfection
- Discharge
- Recap of the basics

Unit 2:

- Detailed Look at each of the systems, and operating parameters
- What needs Maintenance, Attention, and what frequency?
- Flow Measurements

- Screening
- Grit Removal
- Sedimentation
- Aeration
- Clarifiers
- The importance of the laboratory and tests and measurements
- BOD vs. COD
- TSS & VSS Control
- Other Control Parameters

Unit 3:

- Pumps and Pumping and Recirculation & Maintenance
- Controlling MLSS
- Nitrogen and Phosphorous Removals & Recirculation Ratios
- Clarifiers & Maintenance
- Sludge Thickening

Unit 4:

- Sludge dewatering
- Sludge digestion Aerobic and Anaerobic
- Sludge drying, incineration, and land spreading/landfilling
- Introduction to Preventive Maintenance
- Statistical basics and how to keep up with your maintenance schedule

Unit 5:

- What to do with Septage Transport Trucks
- Maintaining the Aeration System & Blowers
- How to tell what's happening in your plant with a Microscope
- Foaming and troubleshooting
- Pumping Stations and their Maintenance
- Pipeline and Force Main Maintenance
- Feedback to the laboratory/ from the laboratory
- Practice Operating a Plant from models - diagnosing troubles
- Post Test