# Treated Wastewater Reuse (TSE) Course: Tertiary Treatment, Reuse Classes and Reuse Schemes

8 – 12 February 2027
Amsterdam - Zuidas business district hotel



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## Introduction:

Treated Wastewater Reuse TSE covering tertiary treatment, reuse classes and reuse schemes is the subject of this 1-week course for engineers and planners who turn treated sewage effluent into supply for irrigation, industry and aquifer recharge, ending with a TSE Reuse Scheme Plan for a case utility. Many utilities discharge most of their secondary effluent because polishing trains, quality classes, offtake contracts and risk controls are never joined into one scheme. Nominees already work on wastewater, irrigation or industrial water supply, and teaching is by case study on effluent data. CoreConcept Training Center delivers this treated wastewater reuse course.

## Course Objectives:

- Assess secondary effluent quality, seasonal flow and reuse demand to size the reclaimed water available for each end use
- Select tertiary trains such as media filtration, MBR, UF and RO and disinfection steps to reach a target reuse quality class
- Match reuse quality classes to restricted and unrestricted irrigation, industrial cooling and aquifer recharge using ISO 16075 guidance
- Prepare a risk-based reuse safety plan with exposure routes, control barriers, verification monitoring and incident responses
- Plan TSE storage, transmission and distribution networks with cross-connection safeguards and tariff and offtake terms
- Compile a TSE Reuse Scheme Plan that links treatment, quality, users, risk and finance for a case utility

## Target Audience:

- Managers responsible for planning water reuse within utility and municipal water resource strategies
- Engineering leads accountable for tertiary treatment upgrades and reclaimed water quality at treatment works
- Scheme managers who run TSE storage, transmission and supply to irrigation and industrial customers
- Quality and public health leads who set reuse monitoring, verification and incident procedures
- Commercial and contracts managers responsible for reclaimed water tariffs and offtake agreements
- Irrigation, landscape and industrial water managers who receive and apply reclaimed water

## Course Outline:

### Day 1: Reclaimed Water Drivers, Effluent Baseline and Reuse Demand

- Water Balance Showing Reclaimed Water Share of Supply
- Secondary Effluent Data Review for Reuse Suitability
- Seasonal Effluent Flow Versus Irrigation Demand Profile
- Reuse End Use Inventory Across Agriculture, Industry, Landscape
- Current Reuse Rate Gap Assessment for a Utility

### Day 2: Tertiary Treatment Trains and Reuse Quality Classes

- Media and Cloth Filtration Performance for Turbidity Targets
- Membrane Bioreactor Effluent Quality Versus Conventional Polishing
- Ultrafiltration and Reverse Osmosis Trains for High-Grade Reuse
- UV, Chlorine and Ozone Disinfection Log Credit Selection
- ISO 16075 Restricted and Unrestricted Irrigation Quality Categories

### Day 3: Matching Reclaimed Water Quality to End Uses

- Agricultural Irrigation Salinity, Sodium and Boron Checks
- Landscape and Urban Irrigation Access and Buffer Rules
- Cooling Tower Makeup Specification From Reclaimed Water
- Aquifer Recharge by Infiltration Basins and Injection Wells
- Fit-for-Purpose Quality Matrix Linking Classes to Users

### Day 4: Reuse Safety Plans, Networks and Scheme Economics

- Sanitation Safety Planning Hazard and Exposure Route Mapping
- Multiple-Barrier Control Validation and Verification Monitoring Plan
- Purple Pipe Distribution, Storage Reservoirs and Cross-Connection Prevention
- Reclaimed Water Tariff Setting and Cost Recovery Model
- Offtake Agreement Terms for Volume, Quality and Interruptions

### Day 5: Case Study on a TSE Reuse Scheme Plan for a Case Utility

- Case Utility Effluent and Demand Data Pack Analysis
- Case Tertiary Train and Quality Class Selection Exercise
- Case Reuse Safety Plan Barrier and Monitoring Drafting
- Case Network Routing, Storage Sizing and Tariff Proposal
- TSE Reuse Scheme Plan Completion and Peer Challenge

## Skills You Will Gain:

- Reclaimed Water Demand Analysis
- Tertiary Process Selection
- Disinfection Log Credit Planning
- Reuse Quality Classification
- Exposure Risk Assessment
- Reclaimed Water Network Planning
- Reuse Tariff Modelling
- Offtake Contract Structuring

## Why Attend This Course:

- Deliver a TSE Reuse Scheme Plan to the utility director, planning unit and major reclaimed water customers
- Decide which tertiary train and disinfection step a given end use requires before capital is committed
- Avoid health incidents, cross-connections and unsold reclaimed water caused by mismatched quality and demand
- Brief operations, commercial and public health colleagues on reuse classes, barriers and offtake terms

## Conclusion:

Back at work, the participant presents the TSE Reuse Scheme Plan to the utility director, the planning unit and prospective offtakers, who use it to approve tertiary upgrades, network extensions and the first reclaimed water contracts. Public health and quality staff use the reuse safety plan to agree barriers and verification sampling. After the first season of supply, the unit should review reuse volumes, quality exceedances, customer complaints and cost recovery, then update the quality matrix and tariff.

## Frequently Asked Questions FAQ:

### What should participants know before a treated wastewater reuse TSE course?

Participants should understand basic wastewater treatment stages and effluent parameters such as BOD, suspended solids and coliforms. Experience in water planning, irrigation or industrial supply helps. Bringing anonymised effluent data or a reuse demand list strengthens the case study.

### How does a treated wastewater reuse TSE course differ from a sewage treatment plant operation course?

It starts where secondary treatment ends: tertiary polishing, reuse quality classes, end-use matching, reuse safety plans, networks and tariffs. A plant operation course teaches running activated sludge, nutrient removal and sludge units day to day.

## Why do treated wastewater reuse TSE schemes use quality classes?

Quality classes let each end use receive water treated only as far as its exposure risk requires. Unrestricted irrigation needs stricter pathogen and turbidity limits than restricted irrigation or industrial cooling, which keeps treatment cost proportionate to risk.

## What do participants take back from the treated wastewater reuse TSE course?

Participants take back a TSE Reuse Scheme Plan, plus a fit-for-purpose quality matrix, a reuse safety plan template, a tariff and cost recovery model and offtake agreement checklist adaptable to their own utility.