

# WATER MANAGEMENT MASTERCLASS

## DRINKING , DOMESTIC & INDUSTRIAL WASTEWATER

28 -29 October 2026

### On-Line Workshop Live Stream Sessions

#### Objectives & outcomes of the course: Drinking Water

Identifying ways of assessing water for its “fit for use”  
Understanding and applying the new SANS 241: 2015  
Appreciating the importance of continuous monitoring and assessment of drinking water quality  
Gaining insight into the current blue-drop requirements  
Determining water pollution control measures  
Learning solutions and challenges faced while maintaining and improving a robust ,high quality drinking water system  
Explaining what is currently being done wrong and what can be done right in protecting water quality.

#### Objectives & outcomes of the course: Domestic Wastewater

Understanding the need for water quality and treatment  
A knowledge of the various water sources available for purifying to drinking water quality  
An understanding of the water quality parameters of these water sources preventing the safe drinking of water  
A knowledge & understanding of the various processes required to treat these sources to a potable water quality  
Understanding the need for municipal wastewater management & treatment  
Understanding the municipal by-law limitations for wastewater disposal to sewer

#### Objectives & outcomes of the course: Industrial Wastewater

The need for industrial water management & treatment  
The Municipal levy system  
The various types of industrial water and effluents  
A knowledge & understanding of the various processes required to treat these sources to the required quality level  
The ability to apply the most suitable process & design concepts of the processes

#### **WORKSHOP TIMES: Per day over 2 days**

08h30 – 10h30 start training- First training session

10h30 – 11h00 Mid-morning break

11h00 13h00 second training session

13h00 14h00 Lunch break

14h00- 15h30 third training session

15h30 Close of workshop



## Drinking Water Treatment

### **Introduction to drinking water quality**

Definition of terms

Fitness for use

Characterisation of domestic water use

Constituents and their effects

### **Blue-Drop requirements**

Water Safety Planning (WSP)

Process management and control

Drinking Water Quality Verification and SANS 241: 2015

Management, accountability and local regulation

Asset management

### **Water treatment processes**

Coagulation/flocculation

Sedimentation and flotation

Sand filtration

Disinfection

Chemical stabilisation

Fluoridation

Residuals handling and treatment

Advanced processes

### **Requirements and Compliance**

Drinking water quality compliance

Minimum requirements for drinking water quality

Compliance calculations

Compliance and risk management

Calculations and their applications

### **Treatment of Various Sources of Water to Drinking Water**

Inland surface waters

Groundwater

Sewage Water ( reclamation )

Seawater ( desalination )



## Domestic Wastewater

### **The need for wastewater management & treatment re.human health & the environment**

Municipal by-law requirements, limitations & levies for discharge of effluents to sewer

### **Application of Govt. legislation:**

**General & Special**

### **Standards for discharge to the environment**

The typical undesirable pollutants to remove

Collection & conveying of sewerage and the diurnal & weekly cycles

Storm water management

Characterization of sewage effluent

The microbiology of sewage treatment

### **The treatment of sewage effluents & processes normally employed (= standard sewage treatment, without nutrient removal):**

Course screening

Grit removal

Flow equalization

Fat & grease removal

Primary settling

Activated sludge system (without nutrient removal)

Secondary settling

Anaerobic sludge digestion

Final effluent disinfection

Sludge handling, disposal & utilization

### **Nutrient removal sewage treatment processes:**

Biological nitrogen removal

Biological excess phosphorus removal

Design considerations for biological nitrogen and phosphorus removal plants

### **Treatment processes covered additionally:**

Chemical treatment for phosphorus removal

Activated sludge systems using Membrane Bioreactors

Pond systems

Rotating biological contactor

Sequencing batch reactors

Trickling filters

Bio filtration (bio towers)

Reed beds

Other & new processes (example - Moving bed bio film reactor...)

Tertiary treatment of effluents for municipal & industrial reuse of water

Tertiary treatment of sewage effluents for potable water supply (= "water reclamation")

The future of sewage effluent treatment & the reclamation of valuable by-products



# Industrial Wastewater

## **The need for industrial water management & treatment**

The Municipal levy system

The various types of industrial water and effluents

A knowledge & understanding of the various processes required to treat these sources to the required quality level

The ability to apply the most suitable process & sizing of the selected process

Processes covered for the removal of solids and suspended solids (and including fats, oil & grease)

Course screening

Flow equalization

pH adjustment

Coagulation & flocculation (including for fats, oil & greases)

Settling/DAF

Sand filtration

Membranes for particulates removal

Removal of dissolved material

Removal of hardness (Nano filtration, Reverse osmosis, Ion exchange)

Removal of dissolved metals, salts and low concentrations of unwanted organic pollutants (pH elevation and precipitation, Activated carbon, Ion exchange (IX), reverse osmosis (RO))

Removal of high COD(high biological content):

Anaerobic ponds

Aerobic ponds

Physico-chemical processes (coagulation, flocculation and settling/DAF)

Anaerobic systems (standard, UASB)

Bio filtration (bio towers)

Activated sludge systems

Membrane bioreactors

Solids thickening, dewatering & drying

Screens

Gravity & DAF thickening

Centrifugation

Filter presses

Drying beds

Sampling

Objectives and Concepts

Preparing for the Sampling Program

Sample Collection





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**BOOKING FORM**

*On-Line Training*

GPW

Email Completed Registration Form To: dev@gptc.co.za

Company Name: \_\_\_\_\_

Type of Business: \_\_\_\_\_

Address: \_\_\_\_\_

Tel: \_\_\_\_\_ Fax: \_\_\_\_\_ VAT Number: \_\_\_\_\_

**Delegate 1:** \_\_\_\_\_

Position: \_\_\_\_\_ E-Mail: \_\_\_\_\_

**Delegate 2:** \_\_\_\_\_

Position: \_\_\_\_\_ E-Mail: \_\_\_\_\_

**Delegate 3:** \_\_\_\_\_

Position: \_\_\_\_\_ E-Mail: \_\_\_\_\_

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Position: \_\_\_\_\_ E-Mail: \_\_\_\_\_

**Delegate 5:** \_\_\_\_\_

Position: \_\_\_\_\_ E-Mail: \_\_\_\_\_

**AUTHORISATION:** *Signature must be authorised to sign on behalf of Company*

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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