Training Title
WATER TREATMENT TECHNOLOGY

Training Duration
5 days

Training Venue and Dates

Ref. No. PE102	**Water Treatment Technology**	**5**	**17–21 Feb. 2025**	**$5,500**	**Dubai, UAE**

In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.

Training Fees

- **$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.**

Training Certificate
Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING INTRODUCTION & DESCRIPTION

Billions of gallons of wastewater containing oils and particulates are produced each year by metallurgical plants, ships, petroleum and gas operations, industrial washing operations, and other processes. Traditional technologies, such as gravity separators, air or gas flotation, chemical flocculation, plate coalescers, and hydro clones, are generally able to produce effluents containing as little as 30 ppm dispersed oil and particulates. However, these treatment technologies perform poorly on chemically stabilized suspensions and emulsions, very small particles and droplets (G-10 um in diameter), and soluble components. Moreover, effluents with less than 10 ppm impurities are desired, because of the potential toxic effects of the contaminants and their tendency to foul reverse-osmosis membranes and downstream processing equipment.

Microfiltration and ultrafiltration membranes are able to remove particulates, microorganisms and oils from water, if the membrane material and pore sizes are chosen appropriately. However, they are subject to fouling, which often reduces the permeating flux (volume of water passing through the membrane per surface area per time) below acceptable levels.

Water systems have long tended to be one of the neglected areas of the process plant. However, this situation is changing rapidly as environmental legislation tightens. This course is uniquely placed to assist process plants in meeting these challenges, offering unrivalled expertise in water systems and the problems associated with the treatment of oily water. Much of the technology discussed in this course has been developed to meet the challenges faced in the

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North Sea; oil producers their face some of the toughest environmental controls in the oil industry.
This course will cover all stages of oily water treatment from receiving waste oil and oily water to delivering clean water that meets the environmentally safe standards.

TRAINING OBJECTIVES

Upon the successful completion of this course, each participant will be able to: -

- Apply the latest techniques and technologies in oily water treatment.
- Discuss the sources of oily water in oil production fields, refining and steam cracking and explain the environmental imperative standards & legislations pertaining to the discharge of oily water.
- Describe the layout of treatments, stages of general effluent treatment, the pretreatment of sour condensates, principles of preliminary oil separation and the physicochemical purification of effluents from preliminary oil separators.
- Monitor purification plants such as measurement of hydrocarbons and organic matter, pH meters and performance of WTP equipment.
- Discuss new technology such as membrane biological reactors (MBR), rotating biological contractors (RBC), sequence batch reactor (SBR) as well as sludge pumping and flowmeters for mass balances.

WHO SHOULD ATTEND?

This course is intended for environmental and HSE professionals and engineers, oily water treatment staff, design engineers and sewage operators, municipal planners and engineers, plant and maintenance engineers, mechanical engineers, technicians and staff. Further, this course is suitable for process engineers, operation, maintenance, inspection and production managers, supervisors, foremen and anyone responsible for managing and operating wastewater treatment facilities.

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of the multiple-choice type will be made available on a daily basis to examine the effectiveness of delivering the course.
Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises

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- 20% Videos& General Discussions

DAILY OUTLINE

1. Introduction
2. Nature of the Pollution
   a. Mineral Pollution
   b. Organic Pollution
3. Main Sources of Pollution
   a. At the Production
   b. During Transportation
   c. During Refining
4. General Pollution Criteria
   a. General Criteria
   b. Specific Criteria
5. Interpretation of Pollution and Treatability
6. Treating Systems
   a. Primary Treatment
   b. Secondary Treatment
   c. Tertiary Treatment
   d. Biological Treatment
   e. BOD& COD Reduction
7. De – Oiling of Water
   a. Purpose of De – Oiling
   b. API Interceptor
   c. Parallel Plate and Corrugated Plate Interceptor (PPI and CPI)
   d. Flotation Units
   e. Flocculation Units
   f. Loose – Media or Fibrous – Media Coalescers
   g. Bio treaters
   h. Nomenclature

NOTE:
Pre & Post Tests will be conducted
Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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