TRAINING PROGRAM

Chemical Water Quality Analysis

Introduction:

The course provides a framework and knowledge of the issues, aspects and principles in water quality management. Good quality water is necessary for domestic, environmental, industrial, recreational and agricultural uses. For those working in water analysis and management, it is important to understand the rationale and be competent in the characterization of water quality in natural systems and the human activities that result in contaminant input to these systems. This includes the physical, chemical, biological and hydrological characteristics of water systems in junction to water quality management issues.

Who Should Attend?

This course is designed for Supervisors, engineers, chemists and technicians responsible for water quality in plants.

Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration

Course Objectives:

Introduce the concepts of water quality to water professionals. Build a comprehensive awareness of the physical, chemical and biological characteristics of various water systems. Learn ways to improve water quality through treatment and management of chemically and biologically polluted waters. Recognize role of water quality guidelines and legislation in water quality management. Provide a practical understanding of the significant of water quality.

Course Outline:

- Introduction
- Water sources
- Basic Chemistry for Water
- Physical, chemical and biological characteristics of water
- Characteristics of Seawater
- Water quality in rivers, lakes, and ground
- Impurities in Water
- Characteristics of Drinking water
- Water Treatment
    - ❖ Filtration
    - ❖ Clarification
    - ❖ Softening
    - ❖ Bacterial treatment

- Analysis of Water
  - ❖ Why do we need to analyze water?
  - ❖ Water Lab
    - Personnel
    - Laboratory Facilities
    - Sampling
    - Water quality measurement
    - Global standard test methods of water analysis
      - pH acidity and alkalinity
      - Temperature
      - Density
      - Turbidity
      - Total Hardness
      - P, M & OH Alkalinity
      - Specific conductance
      - Total Solids (TS):
      - Total Dissolved Solids (TDS)
      - Total Suspended Solids (TSS)
      - Dissolved Oxygen (DO)
      - Oxygen Demand (COD, BOD)
      - Organic contaminants
      - Toxic Organic Compounds
      - Radioactive contaminants
      - Nutrients
      - Chloride
      - Cyanide
      - Pathogenic microorganisms
      - Sulphite
      - Phosphate
      - Oil and Grease
      - Inorganic Chemicals
    - Main Instruments used in water analysis
    - Interpreting water analysis test results
    - Records and Data Reporting
    - Water Quality Control
    - Water regulations