



# AL017: Water Analysis & Quality Control

## Training Objective:

By the end of the training, participants will be able to:

- ✓ Obtain knowledge on water analysis and quality control
- ✓ Implement water analysis and quality control in water treatment plant operations
- ✓ Discuss the different types of water treatment plants
- ✓ Explain the significant parameters or physical parameters including temperature, pH, color chloride content and conductivity
- ✓ Identify solid measurement and field measurement
- ✓ Understand water treatment plants and its parts
- ✓ Recognize sampling protocols for various chemicals and materials

## Training Designed for:

This course is intended for Operators and Laboratory Technicians, Quality Control, and Microbiologists to help them learn the value of timely feedback from the laboratory and microbiology lab for better operations and control of the plant. Participants are invited to bring plant and lab details with them to help understand the criticality of feedback and solve problems.

## Training Program:

### DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ The different types of water treatment plants
- ❖ What are the significant parameters?
- ❖ Physical Parameters
  - Temperature
  - pH
  - Color
  - Chloride content
  - Conductivity
- ❖ Dissolved and fixed solids measurement and particle sizing
- ❖ Organic contaminants
- ❖ Field measurement & rapid techniques

### DAY TWO:

- ❖ Understanding your water treatment plant and its parts
  - Membrane plants
  - Thermal desalination plants
- ❖ Sampling protocols for various chemicals and materials
- ❖ Making sure that your sample is representative
- ❖ Detailed considerations for analyses
- ❖ Preparing and storing the sample



- ❖ Labeling the sample for feedback
- ❖ Managing the paperwork blizzard of a modern laboratory
- ❖ The value of duplicate and replicate analyses
- ❖ Analysis of metals, sensitivity, conditioning and sample preparation
  - AA techniques and sensitivity
  - Colorimetric techniques
  - ICP techniques
- ❖ Field techniques and their reliability and accuracy

#### DAY THREE:

- ❖ Organic analyses
- ❖ Sample cleanup and prep
- ❖ Equipment and its accuracy
  - Analysis by GC
  - Analysis by GC/MS
  - Analysis by colorimetric techniques

#### DAY FOUR:

- ❖ Ranges for recovery
- ❖ Duplicates & spikes
- ❖ Monitoring instrumentation
- ❖ Calibration
- ❖ Corrosion measurements
- ❖ Laboratory management
- ❖ Laboratory auditing

#### DAY FIVE:

- ❖ Laboratory safety & training
- ❖ Personnel protective equipment
- ❖ Nuclear materials & measurements
- ❖ Other analyses and their significance
  - Langelier index
  - Corrosive waters
  - Conductivity
- ❖ TOC and other continuous monitoring equipment
- ❖ Waste chemicals and lab supplies and wastes disposals
- ❖ Course Conclusion
- ❖ POST-TEST and EVALUATION

### Training Requirements:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.



## Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

## Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

## Training Fees:

**As per the course location** - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

## Training Timings:

### Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

**For training registrations or in-house enquiries, please contact:**

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Training & Career Development Department

