



# Applied Water Technology in Oil & Gas Production

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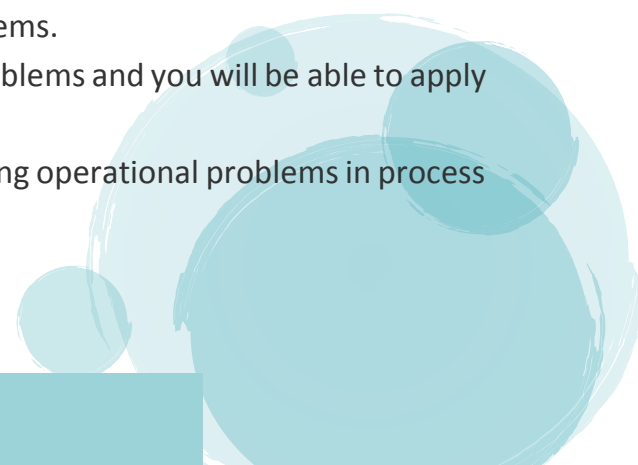
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## Introduction:

**This course provides** an overview of the main water handling systems typically encountered in upstream production operations, both onshore and offshore. The chemistry of the main water related problems of mineral scales, corrosion, bacteria, and oily water will be reviewed both from the theoretical and practical aspects.

Produced water treatment equipment and typical water quality specifications will be reviewed as well as water injection and disposal systems. This course is a must for any person concerned with produced water or water injection systems and the new technologies applied in process operations. A new emphasis has been placed on understanding and resolving operational problems in process equipment.

### The course highlights are:

- This course provides an overview of the main water handling systems typically encountered in upstream (E&P) production operations, both onshore and offshore.
  - The chemistry of the main water related problems of mineral scales, corrosion, bacteria, and oily water will be reviewed both from the theoretical and practical aspects.
  - Produced water treatment equipment and typical water quality specifications will be reviewed as well as water injection and disposal systems.
  - An exercise will be given to identify typical system problems and you will be able to apply the knowledge you gained to propose solutions.
  - Emphasis will be placed on understanding and resolving operational problems in process equipment.
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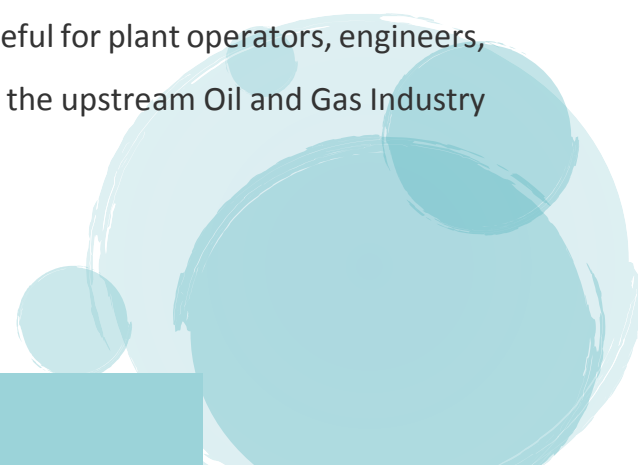
## Objectives:

By the end of this course delegates will be able to:

- Learn about the basics of oilfield water chemistry
  - Know how to monitor and control corrosion, scale, and bacterial growth in produced water and water injection/disposal systems
  - Understand how to implement system surveillance programs to detect potential problems before system damage occurs
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- Learn about produced (oily) water treatment options and related treatment equipment
  - Know how to use the knowledge gained to identify typical system problems and be able to propose solutions
  - Specify water quality requirements for a water injection project
  - Learn about water injection process and water treatment for injection
  - Learn about water treatment for re-injection
  - Understand water treatment equipment for water injection and disposal systems

## Who should attend?

Managers, engineers, chemists, and operators needing to understand water related problems in oil and gas production and their solutions. This course is useful for plant operators, engineers, production foremen, supervisors and technicians working in the upstream Oil and Gas Industry and concerned with water systems.

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## Course Outline:

- Water chemistry fundamentals
  - Water sampling and analysis
  - Water formed scales
  - Corrosion control
  - Water treatment microbiology
  - Produced water discharge/disposal and treatment principles
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- Produced water treating equipment
  - Theory of operation, advantages and disadvantages, and the importance of oil droplet size.
  - Introduction to Water Injection
  - Water injection and disposal systems
  - Water chemistry fundamentals
  - Water formed scales
  - Theory of operation, corrosion, scale, and biological control
  - Water Sampling and Analysis
  - Water Injection Treatment Options
  - Water Injection Process and Systems
  - Water Treatment for Injection
  - Water Treatment for Re-injection
  - Water Quality Monitoring
  - Meeting Water Quality Specification