Produced Water Treatment Technologies Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Produced water, a byproduct of oil and gas exploration, presents significant environmental and operational challenges. Efficient treatment technologies are essential to minimize environmental impact, enhance water reuse, and comply with stringent regulatory standards. Produced Water Treatment Technologies Training Course provides a comprehensive overview of the latest advancements in produced water management, integrating cutting-edge technologies, operational best practices, and real-world case studies to equip professionals with practical knowledge for sustainable water treatment. Participants will gain insights into innovative processes, chemical and biological treatments, membrane technologies, and emerging digital solutions.

As the energy sector faces increasing pressure to reduce water-related risks and improve operational efficiency, mastering produced water treatment has become a critical competency. This training emphasizes hands-on applications, regulatory compliance, and optimization strategies to enable participants to implement effective treatment systems. By combining technical theory with practical examples, the course ensures participants leave with actionable skills to tackle complex water management challenges in oil and gas operations.

Programme Curriculum

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Course Duration

5 days

Course Objectives

1. Understand the composition, characteristics, and challenges of produced water.
2. Analyze environmental and regulatory requirements for water discharge and reuse.
3. Evaluate mechanical, chemical, and biological treatment technologies.
4. Master advanced membrane separation and filtration techniques.
5. Apply oil-water separation technologies effectively in industrial operations.
6. Develop strategies for scaling, corrosion, and fouling mitigation.
7. Implement water reuse and zero-liquid discharge (ZLD) concepts.
8. Integrate digital monitoring and AI-based optimization tools.
9. Design treatment processes for offshore and onshore applications.
10. Assess cost-effective solutions for produced water management.
11. Conduct performance evaluation and troubleshooting of treatment systems.
12. Implement best practices for sustainable water management in oil & gas.
13. Apply lessons from global case studies to enhance operational efficiency.

Target Audience

1. Environmental Engineers and Scientists
2. Process and Chemical Engineers
3. Water Treatment Plant Operators
4. Oil and Gas Production Managers
5. Sustainability and Compliance Officers
6. Research and Development Professionals
7. Technical Consultants in Water Management
8. Graduate Students in Petroleum or Environmental Engineering

Course Modules

Module 1: Introduction to Produced Water

- Definition, sources, and composition of produced water
- Environmental and operational challenges
- Regulatory and discharge standards
- Global trends in produced water management

- **Case Study:** Produced water treatment in North Sea offshore operations

Module 2: Physical and Mechanical Treatment Technologies

- Gravity separation and hydrocyclones
- Dissolved air flotation (DAF) systems
- Filtration techniques
- Sedimentation and skimming processes
- **Case Study:** Offshore platform oil-water separation optimization

Module 3: Chemical Treatment Methods

- Coagulation and flocculation processes
- pH adjustment and neutralization
- Demulsifiers and corrosion inhibitors
- Scaling and precipitation control
- **Case Study:** Onshore treatment plant chemical dosing strategy

Module 4: Biological Treatment Technologies

- Aerobic and anaerobic treatment systems
- Microbial degradation of hydrocarbons
- Bioreactors and biofilm systems
- Nutrient management for microbial growth
- **Case Study:** Produced water biological treatment in shale gas operations

Module 5: Membrane and Advanced Separation Technologies

- Ultrafiltration and reverse osmosis
- Nanofiltration and forward osmosis
- Membrane fouling and cleaning strategies
- Hybrid membrane systems
- **Case Study:** Offshore platform RO system performance optimization

Module 6: Water Reuse and Zero Liquid Discharge (ZLD)

- Water reuse applications in oilfield operations
- Evaporation and crystallization techniques
- Brine management and disposal
- Integrated ZLD systems
- **Case Study:** Onshore ZLD implementation in Middle East oilfields

Module 7: Digitalization and Optimization

- Real-time monitoring and sensors
- AI and machine learning in treatment process optimization
- Predictive maintenance of water treatment systems
- Data-driven performance evaluation
- **Case Study:** AI-assisted process control for offshore water treatment

Module 8: Sustainability, Compliance, and Risk Management

- Environmental impact assessment and reporting

- Compliance with global water regulations
- Risk mitigation strategies for water treatment operations
- Best practices for sustainable water management
- **Case Study:** Regulatory compliance success in Gulf of Mexico operations

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price

23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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