FLOW ASSURANCE & WATER HANDLING

Scale

ABOUT THE COURSE

Inorganic scale buildup often leads to premature equipment failure, requiring repair or replacement. It can also prevent production targets from being achieved due to downtime or reduced well productivity, and it frequently necessitates costly workovers and remedial treatments. As a result, scale formation can significantly undermine both the technical and economic performance of a project.

To effectively manage scale-related risks, operators must implement a robust scale-control management system capable of consistently predicting the likelihood of scale deposition and reliably mitigating its impact across the entire production system. An effective management system begins with a comprehensive risk assessment to identify potential scale locations, along with their probabilities and expected severity over the life of the asset.

Case studies illustrating the development and application of such scale management systems will be presented.

DESIGNED FOR

This course is particularly tailored for petroleum production engineers, laboratory personnel, field operators, system designers, and anyone seeking practical experience in this field, including researchers or managers who want to understand technical issues that support effective decision-making.

COURSE OBJECTIVES

Upon successful completion of the course, participants will be able to:

- A comprehensive understanding of scale challenges associated with fluid production, gathering, treatment, and transportation
- Identify existing and potential threats to uninterrupted fluid flow
- Develop a proactive Scale-Management System
- Validate the selected mitigation methods—or reassessment when results do not meet expectations - enables ongoing optimization of the strategy and can deliver substantial reductions in operating costs.
- Design cost-effective, efficient, and reliable mitigation strategies that maintain production targets and extend equipment service life while complying with environmental regulations
- Define evaluation criteria and calculate Key Performance Indicators (KPIs) related to corrosion, inorganic and organic scaling, and produced water treatment for disposal or reinjection

COURSE OUTLINE

- Scale – Definition
- Common types at the field
- Locations
- Challenges
- Scale Protection – An Easy Task?
- How to Develop the Management System
    - Risk Assessment
    - Management Strategy
    - Monitoring, Validation & Optimization
- Key Performance Indicators
- Case Studies

COURSE DELIVERY METHOD

The course will consist of lectures supported by worked examples, and case studies. In addition, participants are encouraged to bring their own examples for in-class discussion and analysis.

INSTRUCTOR

Snežana Šević holds a B.Sc., M.Sc. and Ph.D. from the Faculty of Technology, University of Novi Sad, and has 40 years of experience in the oil and gas industry. Her areas of expertise include diagnosing issues arising from produced fluid properties; conducting risk analyses and recommending flow assurance management programs during fluid production, gathering, treatment, and transportation; modeling of flow assurance issues, simulation, and optimization of process systems.

She has worked with PM Lucas d.o.o., NIS-Gazprom Neft, and Qimica Apollo – Mexico. She has been involved in over 50 projects across Serbia, Mexico, Kazakhstan, and Russia. Dr. Šević has authored over 30 scientific and technical papers, a book titled *The Impact of Formation Water on Oil and Gas Production and Transportation*, and has supervised several undergraduate, master's, and doctoral theses. In 2018–2019, she was selected as a Distinguished Lecturer by SPE and was part of the SPE E-Mentoring Program for five years.