Upstream Corrosion and Microbiology Training

OVERVIEW

Micro-organisms cause severe problems for oil and gas production facilities including reservoir souring, biofouling and microbiologically influenced corrosion (MIC). MIC damages the integrity of facilities and costs billions of dollars per year in lost production, facilities damage and repair. H$_2$S, generated by microbes is also responsible for corrosion failures due to sulphide stress cracking.

John Crane’s Oil Plus Team has developed a two-day, hands-on learning experience that provides participants an introduction to the different forms and causes of corrosion.

Course Objectives
- Review effects of corrosion
- Identify key options to negate corrosion

Content Delivery
- English

Required Tools
- Laptop computer
- Calculator

GLOBAL SOLUTIONS

Oil Plus Ltd is an independent consulting and oilfield services business group of John Crane, a division of Smiths Group plc. We work closely with oil and gas companies all over the world to provide solutions to a wide range of production chemistry and process engineering issues, starting with extraction from the reservoir, through phase separation and on to water injection and resulting reservoir issues.

For more information please visit www.johncrane.com/oilplus
Course modules

- **Introduction to corrosion** – Describes the most common forms of corrosion found in oil and gas environments
- **Corrosion mechanisms and influences** – Explains the key drivers that play a part in the causes of corrosion
- **Material selection** – Provides an overview of types of materials used, the variety of pipeline coatings and linings, and what types of corrosion commonly associated with the metallurgical structure of these materials
- **Chemicals and their selection** – Provides an in-depth overview of the types, applications and selection of corrosion inhibitors
- **Corrosion control and monitoring** – Details effective corrosion monitoring programs and mitigation strategies
- **Introduction to macro and microbiology** – Outlines the processes, problems and solutions associated with macro-organisms and microorganisms in oilfield systems
- **Macro-organisms** – Highlights common types typically found in water injection systems
- **Micro-organisms (bacteria and archaea)** – Describes key factors that control microbial activity within a system and the conditions under which micro-organisms can become a problem
- **Microbial sampling and analysis** – Emphasises the importance of good sampling and monitoring techniques for microbiological applications
- **Microbial monitoring techniques** – Examines the conventional most probable number (MPN) culturing methods and molecular microbiology methods (MMM) of analysis, and how they should be used
- **Biocide selection** – Provides an in-depth overview of the types, applications and selection of biocide treatment systems
- **System monitoring** – Examines various types of monitoring regimes/techniques required in order to understand what micro-organisms are present in the system, how many there are and whether they are under control so that effective mitigation and remediation strategies can be implemented