ARTIFICIAL LIFT SYSTEM (ELECTRICAL SUBMERSIBLE PUMP)

TRAINIT ACADEMY

DRPT 211 Drilling, Reservoir & Petroleum Training

COURSE TITLE

Artificial Lift System (Electrical Submersible Pump)

COURSE DATE/VENUE

19th-23rd Aug 24'

London, UK

COURSE REFERENCE

DRPT211

COURSE DURATION

05 Days

DISCIPLINE

Drilling, Reservoir & Petroleum Training

COURSE INTRODUCTION

The course is designed to provide comprehensive information's to all aspects of the well flow, artificial lift systems, ESP design, surveillance and troubleshooting, maxiimize the oil production and learn how to deal with harsh environments using ESP lifting systems. The course will be conducted as lecturers and attendees will be actively encouraged to participate. The course content will be fully illustrated with actual data of design and troubleshooting to aid understanding and help to overcome any difficult problems. Comprehensive course notes will be provided, which will form a valuable source of reference afterwards.

COURSE OBJECTIVE

After completing this course the participants will have:

- Fully understanding of the oil production system and multiphase flow
- Fully understanding of different artificial lift types and selection criteria
- The ability to design ESP systems
- The ability to take the necessary corrective action to deal with harsh environments

- The ability to perform all the required troubleshooting with ESP systems
- The ability to verify some actual well problems using Multi-sensors graph, Amperage chart analysis and problems interpretations

COURSE AUDIENCE

This course is designed for production technologists, artificial lift and well surveillance teams, production engineers, reservoir and completion engineers, project managers, plant managers, plant supervisors, production supervisors, technical staff, operators, technicians and contractor personnel involved in the production of oil.

COURSE CONTENT

DAY 1

Production System Analysis and Artificial Lifting Systems

- **Production system overview**
- **Reservoir drive mechanisms**
- **Produced fluids properties**
- **Inflow performance relationship**
- **Vertical Lift Performance**
- **Multiphase flow and Multiphase flow correlations**
- **System nodal analysis**
- **Tubing Selection and completion equipment**
- **Why we need lifting?**
- **Tips regarding well modeling**
- **Gas lift technology and downhole equipment**
- **Gas lift design types and unloading**
- **Optimum GLR and injection depth**
- **Pumping systems**

Day 2

ESP Equipments

- **ESP system components & basic theory**
- **Downhole components**
- **Surface components**
- **Additional equipments, Pump construction types**
- **System advantages & disadvantages**

Day 3

ESP Operations

- **ESP installation**
- **ESP design**
- **ESP system sizing and selection**
- **Total dynamic head (TDH) calculations**
- **New ESP systems**
- **ESP application in harsh environments**
- **Tips regarding ESP design and troubleshooting with software's**
- **High GOR well production**
- **Production with solids and viscous oil**

Day 4

ESP Troubleshooting

- **Analysis of an ESP system using diagnostics**
- **Examples of ESP troubleshooting and failure analysis**
- **ESP watcher and surveillance**
- **ESP monitoring through ammeter charts**
- **ESP monitoring through multi-sensors**
- **ESP parameters analysis to improve well production**
- **Tubing leak detection and troubleshooting**
- **Production choke types**
- **Critical and subcritical flow**
- **Hydraulic pumping systems**
- **PCP application**

Day 5

Well Production/Run Life Enhancement

- **Pressure temperature survey analysis**
- **Chemical injection applications with artificial lifting systems**
- **Well intervention applications with ESP completion**
- **New ESP systems**
- **Rigless ESP**
- **Hydrates, scales, erosion, corrosion and bottleneck analysis and mitigation**
- **Sand control systems**
- **System failure analysis**
- **Run-life factors**
- **Troubleshooting real cases**

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

£5,750 per Delegate. This rate includes participant's manual, Hand-Outs, lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions