Early Development Series

Surface Production and Operations Foundation

Designed for:
The course is designed for those working in the design and operation functions of surface facilities, from the wellhead to the terminal. It will be of interest to those interfacing with production and operations within the company.

Duration
(days)

1 2 3 4 5 6 7 8 9 10
flexible

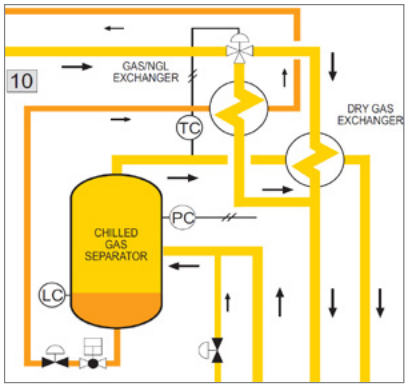
Learning Level:
Skills
Knowledge
Awareness

The course is a combination of input sessions from the tutors and practical exercise by participants, working in small teams on equipment selection and plant layout. An element of effective team building can be incorporated if run in a classroom setting.

By combining experienced reservoir and process engineers, TRACS has developed a course that provides a foundation level understanding of the physical processing units required to treat fluids from the wellhead to the point of delivery in a safe and cost-effective manner.

Starting with the uncertainties in composition and rate resulting from reservoir development decisions, produced fluids are followed through the processing units required for separation and further treatment to meet product or disposal specifications. This includes the selection, design and operation of equipment items to handle hydrocarbon and water streams as well as contaminants.

Using a case study throughout, participants build up a process flow scheme and design a plant layout in a series of practical exercises supported by a desktop model. TRACS has successfully run this course for multiple Middle East clients, using a land based setting. The case study can be adapted to offshore settings if requested.



Early Development
E&P Overview
Reservoir
Wells

Business & Risk
Open Air
Coaching
Master Class

Surface Production and Operations Foundation continued

Course Content:

Topics are covered using a detailed case study in which participants work on:

- Influence of reservoir development and well completion decisions on rate, fluid type and range of uncertainty in production forecasts
- Introduction to process engineering and basis of design
- Fundamentals of chemical engineering, phase behavior and flow equations
- Choke design
- Separator principles and equipment sizing
- Oil processing – desalting, dehydration, export and storage facilities
- Pump design
- Gas processing – dew point conditioning, cooling, compression
- Heat exchanger design and selection
- Water processing – produced water disposal, injection water treatment
- Application of TECOP principles to safety management and equipment selection
- Process safety principles, instrumentation and control
- Building the overall process flow diagram (PFD) and plant layout

Course Duration:

Duration ; 40 hours – 5 full days or 10 half days, face-to-face or online delivery.

Tailoring on request : offshore environment, detailed instrumentation and control, specific processing requirements

Courses available from this series:
Graduate Foundation Training
Subsurface Technical Fundamentals
Production and Operations Training

Course Tutors

Mark Cook BSc, MBA

Main Series tutoring: Early Development, Business & Risk, Reservoir Engineering
Industry experience: over 40 years, reservoir engineering, economics and risk analysis
Career background: Shell, TRACS (Director) and AGR (VP)
Personal: Author, 'Author, 'Petroleum Economics and Risk Analysis' (2021) 'Hydrocarbon Exploration and Production' (2008) SPE distinguished lecturer on Risk Analysis, Guest lecturer at Heriot Watt University

Jerry Hadwin BSc, MEng

Main Series tutoring: Reservoir, Early Development, Open Air
Industry experience: over 35 years, reservoir engineering
Career background: Shell, TRACS and AGR
Personal: Co-author 'Adventure Trekking in Oman'

Anthony M Dols MSc

Main Series tutoring: Early Development
Industry experience: over 40 years, mechanical engineering, process facilities engineering, economics and finance
Career background: Avantis4E DMCC, Dubai, Standard Chartered Bank, DIFC, Dubai, ABN AMRO BANK, Shell International Petroleum
Personal: Moderator and speaker at Oil & Gas conferences around the world.

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