Reservoir Fluid Lab Properties (RFLP)

COURSE LEVEL: intermediate, basic knowledge of physics required.

COURSE DURATION**:** 5 days, in-house with companies.

DESIGNED FOR: Reservoir- and facility engineers who use PVT properties for engineering studies, reservoir simulation, facility design and fluid modeling via Equation of State.

YOU WILL LEARN HOW TO

- Plan and check sampling activities
- Determine the reservoir fluid composition from the field samples
- Understand the phase behavior of fluids in laboratory experiments
- Determine the properties for each component
- Carry out consistency checks of experimental lab data
- Determine the fluid properties for pure and hypothetical components
- Prepare the lab data for engineering purposes – simulation, production facility design

ABOUT THE COURSE

Reports from other departments are often read without detailed technical knowledge of how the data were generated. This course lays out the basic principles of work done in a laboratory, how samples are planned and taken, and how subsequent experiments are carried out. This starts with selecting the correct experiment, based different fluid types and on the production regime. Depending on the equipment used, weak points in the experimental procedures are pointed out. For different fluid types we will discuss which properties are measured and which are calculated. Consistency checks along with modeling the experiments with an EOS software package will enables the engineer to confidently integrate PVT data into his reservoir simulation or facility design.

COURSE CONTENT

- Types of reservoir fluids.
- Fluid properties that need to be determined for each reservoir fluid type.
- Planning of sampling campaigns including sample transport.
- Essentials of laboratory experiments for all fluid types.
- Consistency checks
- Set up properties for hypothetical components.
- Grouping of components.
- Calculation of Vapor Liquid Equilibrium via K-values.
- Basics of Vapor Liquid Equilibrium calculation via Equations of State (EOS).
- Modeling of laboratory experiments with EOS for Black Oil and Gas-Condensates, including capillary condensation.
- Flow assurance.
- Experiments for EOR.
- Practical examples in each step of the course.