

Petrophysical Training Options

Annually in Vienna (May) and Dubai (October)

In-House Tailored Courses

1. Integrated Petrophysics for Reservoir Characterisation Details Schedule

This course will teach you how to evaluate reservoirs and quickly identify flawed results. Robust, minimum error reserves are achieved by a logical, systematic integration of all relevant data. Interpretation is cost-effective compared with data acquisition or development mistakes and is essential for the complex reservoirs and marginal fields being evaluated today. Systematic Integration often replaces the need to run expensive logs and explains apparent data conflicts. It provides the right answer faster, minimizes uncertainty and strengthens your position as an operator. By contrast, stand-alone log analysis often results in bad economic decisions and bad personal reputations. This course demonstrates through an experienced consultant how robust answers are achieved by the integration of diverse data. Basic economic questions are addressed first by **Quick Look Log Analysis** then head-on by a disciplined, logical process which optimizes the interpretation of Porosity, Saturation, Permeability, Netpay, and Fluid Contacts - the basis of Reserves. Low-Contrast-Low-Resistivity pay, clastics and carbonates are evaluated by simple integration techniques which outperform log analysis with clear, direct results. LWD, wireline, NMR, image logs, routine & special core and MDTs are brought innovatively together to interpret difficult exploration wells, clarify Sw and permeability, increase reserves and improve reservoir simulation. The basic seismic petrophysics work flow to project results into geo.models is then reviewed.

This course is a condensed packet of powerful integration techniques. It continuously evolves by natural selection over 20 years of presentations and mainstream consulting. Its manual provides comprehensive and lasting benefit to the novice and experienced student alike. *Integrated Petrophysics..* was the first mainstream, public petrophysics integration course and remains **THE BENCHMARK PETROPHYSICS COURSE TODAY**. Do not be fooled by imitations!

2. Carbonate and Fracture Petrophysics - A Roadmap Details Schedule

This intermediate course provides **The Complete Carbonate & Fracture Evaluation Recipe**, from Quick Look log analysis to the exhaustive, logical integration of all data from mudlogs, modern LWD and hi-tech wireline, cores and well tests. Fracture evaluation is included because carbonates, basement and tight clastics are often fractured. Although the same petrophysical principles apply to all reservoirs a clastics style log analysis can be completely misleading in these reservoirs, hence training and integration are essential to avoid expensive mistakes. Carbonate petrophysics is dominated by forces unfamiliar to the clastics geoscientist such as extremely diverse pore-geometries, and the lack of total porosity and clays as the basic control on reservoir quality. Such features mean **the petrophysicist must think hard** if petrophysical results are to provide a secure basis for operational decisions.

The physical differences between clastics and carbonates & fractures are contrasted and explained in the context of attempting to achieve answers from conventional data. The **failure entry points** of conventional data are highlighted and juxtaposed with the purpose designed data acquisition and integration process proven successful in these difficult reservoirs. Theory is interleaved with real-world examples, micro-practicals and work sessions to consolidate principles. The last day includes a key theory/workshop wrap-up session to derive capillary pressure Sw's and integrate these with routine core analysis and logged resistivity, with an actual carbonate data set. All core analysis, from routine to diverse special core analysis; logs from conventional to modern LWD, acoustic, NMR and image; and well tests are explained and intelligently exploited in this up-to-date course. This course is not a carbonates geology course its **"Think Petrophysics!"** for 5 straight days. If you love petrophysics you will love this course!

3. Actual Well/Field Evaluation Workshop - Computer Details Schedule

PPL and students **perform an actual evaluation on a cored well, purpose designed data set, or client supplied data set**. Data is loaded to PPL and client software. ALL major stages necessary for a full petrophysical integration are discussed and then actually performed by both Instructor and students. A twice daily open critique and proposal session of the ongoing evaluation keeps the class highly motivated and tightly focused. The evaluation sequence is continuously displayed to reinforce real-world constraints of Time vs. Fit-For-Purpose results. All evaluation parameters are documented together with a short report and key figures as in a real study. Stages include: Log, Core, SCAL, MDT, and DST data organisation and loading, zonation, vclay, total and effective porosities, water zones, Rw, Pickett plots, Rwa, m, Ro prediction, n, Swrt, Fluid Zones, Bound fluid volumes, Coates permeability, Capillary pressure quick-look Sw's (yes, this is possible see Integrated Petrophysics..), Base case Sw, Swrt optimisation, Netpay, Zone averages, short Report and Figures. **All data is properly integrated according to PPL standards**. Certificates detailing each major stage are checked and issued for each student. These 5 days offer a powerful, dynamic training session in which participants actually experience and the practical issues at stake and make the key choices which impact reserves themselves. Perhaps surprisingly it has been found that no previous petrophysical knowledge is required, however, attendance to IPRC (above) or, if a client supplied carbonate data set is used, to CFP (above), is strongly recommended.

4. Parallel Petrophysical Training

PPL conducts on-the-job documented petrophysical training concurrently with technical consulting. **Up to 4 staff engage in a daily critique session of PPL's work and perform a cut-down version of the same tasks the next day**. Their progress is documented and signed off, building competency towards a complete integrated petrophysical field study with all stages undergoing rigorous cross-examination and debate! This process produces diligently executed, robust studies as well as providing unbeatably cost-effective, hands-on training, within the 'real-world' framework of an operating energy company.