

## Well planning, Evaluation and Recording

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An exploration, appraisal or production drilling program normally has its origins from subsurface. The exploration or exploitation manager holds the funds for the project however the skills required to get the well drilled usually lie in other departments. Commonly a project team is put together headed by a drilling manager. Subsurface and drilling goals need to be aligned In order for the project to progress smoothly. As part of this process key information needs to pass from subsurface to the project team in a timely manner to allow contacting and long lead items to be ordered.

Good well planning requires data. This course focuses primarily on the importance data acquisition; for the successful drilling of the well; for the evaluation of the prospect; to build up a regional picture of rock properties for further exploration and appraisal opportunities.

### Well Planning and Data Acquisition

**Mud systems** and their impact on data acquisition

**Shallow Hazards**, shallow gas, water flows, glacial channels. Pilot hole logging opportunities.

**Overburden hazards**, Swelling clays, Gas chimneys, Salt or Tectonic Dome induced fractures and their implications – their drilling and evaluation

Well **Pore Pressure** profile, casing placement in high pressure wells, well breathing – required data.

Putting the **Data Acquisition plan** together (dry well v successful well). Contingency planning.

**Soft skills**. The importance of communication between the subsurface team and the project team and the benefit of multi-disciplinary teams and knowledge management techniques for the achievement of successful drilling projects.

### Drilling Phase.

Monitoring the well at the wellsite and in the office. Evaluating the data. Data quality control. Data issues and recording these on log headers. Environmental corrections. Depth control. Coring, Pressure data, Fluid samples, Testing. Quality of post well analysis can be jeopardised by poor data acquisition practice at the wellsite.

### Post Drilling

**Data Management** – Avoiding black holes. **Have a process** that ensures the specialists verify data received. Today's logging tools generate lots of measurements many of which make no sense other than to specialist users. Contractors do not always supply the full array of recorded measurements and this commonly does not come to light until many months after the well has been completed and the contractors have moved on.

**How to QC all final log data**, log plots and their headers

**Post well programmes**: Routine Core Analysis, SCAL, Water Analysis, Hydrocarbon Analysis, Biostratigraphy, Sedimentology, Geochemistry

## About the instructor

Ray has been involved in oil and gas exploration and production for 37 years. A geology graduate of Kings College London, a fellow of the Geological Society of London and an AAPG member for over 27 years, Ray has worked as a mudlogger, pore pressure engineer, operations geologist and petrophysicist. In 1995 Ray completed an MSc in Management and Organisational Development with a thesis on Self Directed Teams in Oil and Gas. He has successfully practised these learning's during his roles as Operations Geologist and Petrophysicist with a number of client companies where his ability to create effective teams, technical knowledge and mentoring skills were held in high regard.