COURSE OVERVIEW DE0382
Cased Hole Logging & Formation Evaluation

Course Title
Cased Hole Logging & Formation Evaluation

Course Date/Venue
Session 1:April 13-17, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar
Session 2: September 07-11, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Course Reference
DE0382

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Date/Venue

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Cased Hole Logging & Formation Evaluation. It covers the different tools used for cased hole logging; the basic concepts and applications in cased holes; the principles of gamma ray logging; the cased hole formation evaluation, data acquisition and quality control in cased hole logging; the safety aspects in cased hole operations, pulse neutron logging and carbon/oxygen logging for saturation monitoring; and the spectral gamma ray logging, cement bond logging (CBL) and evaluation as well as radial bond logging (RBL) techniques.

During this interactive course, participants will learn the production logging tools, temperature and pressure logging; the techniques for measuring and interpreting flow rate; the spinner flowmeter data in production logging; the different types of production fluids; the reservoir pressure monitoring, waterflood and EOR monitoring and pulse neutron capture analysis (PNCA); integrating cased hole data with openhole logs to enhance formation evaluation; the time-lapse logging for reservoir management; the latest development in cased hole logging tools; the quantitative interpretation of cased hole logs and addressing the challenges in high-angle and horizontal wells; and the unconventional reservoir evaluation and integrating cased hole data with geological and reservoir models.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on cased hole logging and formation evaluation
- Discuss the importance and applications of cased hole logging including the different tools used for cased hole logging
- Recognize the basic concepts and applications in cased holes as well as the principles of gamma ray logging
- Carryout cased hole formation evaluation, data acquisition and quality control in cased hole logging
- Discuss the safety aspects in cased hole operations, pulse neutron logging and carbon/oxygen logging for saturation monitoring
- Illustrate spectral gamma ray logging, cement bond logging (CBL) and evaluation as well as radial bond logging (RBL) techniques
- Identify the production logging tools, temperature and pressure logging and the techniques for measuring and interpreting flow rates
- Explain the spinner flowmeter data in production logging and distinguish different types of production fluids
- Employ reservoir pressure monitoring, waterflood and EOR monitoring and pulse neutron capture analysis (PNCA)
- Integrate cased hole data with openhole logs to enhance formation evaluation
- Recognize time-lapse logging for reservoir management and the latest development in cased hole logging tools
- Carryout quantitative interpretation of cased hole logs and address the challenges in high-angle and horizontal wells
- Apply unconventional reservoir evaluation and integrate cased hole data with geological and reservoir models

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of cased hole logging and formation evaluation for petroleum engineers, geoscientists, logging engineers, reservoir engineers, petrophysicists, drilling and completion engineers, field technicians, managers and decision-makers and other technical staff.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Course Fees

US$ 8,500 per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Dr. Steve Ehrenberg, PhD, MSc, BSc, is a **Senior Geologist & Reservoir Engineer** with **45 years** of extensive experience within the **Oil** & **Gas**, **Petrochemical** and **Refinery** industries. His wide experience covers in the areas of **Core** & **Log Integration**, **Water Saturation**, **Coring** & **Core Analysis**, **Special Core Analysis**, **Log** Interpretation, Cased-Hole Logging, **Core Calibration**, **Core Analysis**, Core-to-Log Data Integration (**SCAL**), **Wireline** Logging, **Mud** Logging, **Cased Hole** Logging, **Production** Logging, **Well Logging**, **Reservoir** Management, **Reservoir** Appraisal & Development, **Carbonate Reservoir** Management, **Fractured Reservoirs** Evaluation & Management, **Naturally Fractured Reservoir**, Integrated **Carbonate Reservoir** Characterization, **Geological Modelling**, **Reservoir Characterization**, **Geomodelling**, Development **Geology**, **Petroleum Geology**, **Exploration Production**, **Structural Geology**, **Wellsite Geology**, Analytic Modelling Methods, **Sedimentary Geology**, **Geophysics**, **Geophysical Exploration**, **Reservoir** Engineering, **Reservoir** Engineering Applications, **Reservoir** Engineering & Stimulation, **Reservoir** Characterization, **Clastic Reservoir**, **Carbonate Reservoir Petrology**, Subsurface Facies Analysis, **Borehole Images, Geophysical Methods**, **Oil & Gas Exploration**, **Marine & Petroleum Geology**, **Reservoir Performance** Using Classical Methods, **Fractured Reservoir** Evaluation & Management, **Reservoir** Surveillance & Management, **Reservoir Monitoring**, , **Reservoir Volumetrics**, **Water Drive Reservoir**, **Reservoir Evaluation**, **Well Surveillance**, **Well Testing**, **Well Testing** & Oil Well Performance, Well Log Interpretation (**WLI**), Rock Physics & Seismic Data, **Formation Evaluation**, **Well Testing** & Data Interpretation, **Pore Pressure** Prediction and **Oil & Gas Reserves Estimations**, Well Workover Supervision, Description and Prediction of **Reservoir Quality**, **Sequence Stratigraphy** of Carbonate Systems and Introductory Geology.

During his career life, Dr. Ehrenberg held significant positions and dedication as **Consultant**, **Professor**, **Senior Reservoir Geologist**, **Senior Geologist**, **Research Geologist**, **Associate Professor**, **Assistant Professor** and **Senior Instructor/Trainer** from various international companies and universities such as the Badley Ashton & Associates Ltd., Khalifa University of Science and Technology, Sultan Qaboos University, PanTerra Geoconsultants B.V, UAE University, Statoil, Stavanger, Shell Development Company and Northern Illinois University.

Dr. Ehrenberg has a **PhD**, **Master's** and **Bachelor's** degree in **Geology** from the **University of California**, **USA** and **Occidental College**, **USA**, respectively. Further, he is a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**), a **Certified Instructor/Trainer** and has delivered numerous trainings, workshops, courses, seminars and conferences internationally.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Cased Hole Logging**: Overview of its Importance & Applications*
0930 – 0945	*Break*
0945 – 1030	***Cased Hole Logging Tools & Technologies**: Different Tools Used for Cased Hole Logging*
1030 – 1130	***Principles of Gamma Ray Logging**: Basic Concepts & Applications in Cased Holes*
1130 – 1215	***Cased Hole Formation Evaluation**: Techniques & Challenges in Evaluating Formations through Casing*
1215 – 1230	*Break*
1230 – 1330	***Data Acquisition & Quality Control in Cased Hole Logging**: Ensuring Accurate & Reliable Data Collection*
1330 – 1420	***Safety Aspects in Cased Hole Operations**: Key Safety Practices During Cased Hole Logging*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Pulse Neutron Logging**: Principles & Applications in Reservoir Surveillance*
0830 – 0930	***Carbon/Oxygen Logging for Saturation Monitoring**: Techniques for Monitoring Hydrocarbon Saturation*
0930 – 0945	*Break*
0945 – 1100	***Spectral Gamma Ray Logging**: Advanced Applications & Interpretation*
1100 – 1215	***Cement Bond Logging (CBL) & Evaluation**: Assessing Cement Integrity & Zonal Isolation*
1215 – 1230	*Break*
1230 – 1330	***Radial Bond Logging (RBL) Techniques**: Further Insights into Cement Bond Evaluation*
1330 – 1420	***Case Studies**: Analysis of Cased Hole Log Data from Various Wells*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Overview of Production Logging Tools**: Introduction to Tools Used in Production Logging*
0830 – 0930	***Temperature & Pressure Logging**: Applications in Understanding Well Performance*
0930 – 0945	*Break*
0945 – 1100	***Flow Rate Measurement & Analysis**: Techniques for Measuring & Interpreting Flow Rates.*
1100 – 1215	***Spinner Flowmeter Logging**: Spinner Flowmeter Data in Production Logging*
1215 – 1230	*Break*
1230 – 1330	***Fluid Identification & Analysis in Production Logs**: Distinguishing Different Types of Production Fluids*
1330 – 1420	***Practical Exercise**: Interpreting Production Logs from Cased Hole Wells*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Reservoir Pressure Monitoring**: Techniques for Pressure Measurement & Interpretation*
0830 – 0930	***Waterflood & EOR Monitoring**: Using Cased Hole Logs for Enhanced Oil Recovery Projects*
0930 – 0945	*Break*
0945 – 1100	***Pulse Neutron Capture Analysis (PNCA)**: Advanced Applications in Reservoir Monitoring*
1100 – 1215	***Integrating Cased Hole Data with Openhole Logs**: Enhancing Formation Evaluation*
1215 – 1230	*Break*
1230 – 1330	***Time-Lapse Logging for Reservoir Management**: Changes in Reservoir Properties Over Time*
1330 – 1420	***Group Discussion**: Challenges & Solutions in Cased Hole Reservoir Monitoring*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Latest Developments in Cased Hole Logging Tools**: Reviewing New & Emerging Technologies*
0830 – 0930	***Quantitative Interpretation of Cased Hole Logs**: Advanced Techniques for Quantitative Analysis*
0930 – 0945	*Break*
0945 – 1100	***Challenges in High-Angle & Horizontal Wells**: Addressing Unique Aspects of Non-Vertical Wells*
1100 – 1230	***Unconventional Reservoir Evaluation**: Specific Considerations for Shale, Tight Gas & Other Plays*
1230 – 1245	*Break*
1245 – 1345	***Integrating Cased Hole Data with Geological & Reservoir Models**: Building Comprehensive Subsurface Models*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises: -

Course Coordinator

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