



COURSE OVERVIEW DE1091

Stimulation Engineer: Enhanced Recovery & Reservoir Treatment

Course Title

Stimulation Engineer: Enhanced Recovery & Reservoir Treatment

Course Date/Venue

January 26-30, 2026/Tritone Meeting Room,
Grand Hotel Palace, Rome, Italy

Course Reference

DE1091

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with a detailed and up-to-date overview of Stimulation Engineer: Enhanced Recovery & Reservoir Treatment. It covers the reservoir stimulation, reservoir characterization for stimulation and enhanced oil recovery (EOR) principles; the matrix acidizing fundamentals and fracture stimulation fundamentals; the wellbore preparation and candidate selection; the rock mechanics and fracture geometry, fracturing fluids and additives; the proppant selection, transport and fracturing equipment and surface setup; and the pressure and rate monitoring, microseismic fracture mapping, surface and downhole diagnostics and data interpretation and adjustments.



Further, the course will also discuss the fracture treatment evaluation and diagnostics; the acidizing techniques and applications; the acid-rock interaction, reaction kinetics, acidizing additives and compatibility and sandstone acidizing design; the acid placement methods and health, safety and environmental concerns; and the chemical EOR methods, thermal EOR techniques and gas injection methods.



During this interactive course, participants will learn the foam stability and injection techniques, in-situ microbial activity and oil recovery; the bacteria selection, nutrient management and compatibility with reservoir conditions; the screening criteria for pilot sites, injection well design and pressure, production, tracer and monitoring; the production logging and surveillance tools; the post-stimulation well testing and analysis and stimulation optimization strategies; and the future trends in reservoir stimulation.

Course Objectives

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

- Get certified as a “*Certified Stimulation Engineer*”
- Discuss the reservoir stimulation, reservoir characterization for stimulation and enhanced oil recovery (EOR) principles
- Explain matrix acidizing fundamentals and fracture stimulation fundamentals including wellbore preparation and candidate selection
- Identify rock mechanics and fracture geometry, fracturing fluids and additives, proppant selection and transport and fracturing equipment and surface setup
- Illustrate pressure and rate monitoring, microseismic fracture mapping, surface and downhole diagnostics and data interpretation and adjustments
- Carryout fracture treatment evaluation and diagnostics including acidizing techniques and applications
- Recognize acid-rock interaction, reaction kinetics, acidizing additives and compatibility and sandstone acidizing design
- Apply acid placement methods, health, safety and environmental concerns, chemical EOR methods, thermal EOR techniques and gas injection methods
- Employ foam stability and injection techniques, in-situ microbial activity and oil recovery, bacteria selection and nutrient management and compatibility with reservoir conditions
- Apply screening criteria for pilot sites, injection well design and pressure, production, tracer and monitoring
- Identify production logging and surveillance tools covering PLT, spinner, temperature and noise logs, tracer injection and production profiling, distributed temperature sensing (DTS) and fiber optic monitoring
- Carryout post-stimulation well testing and analysis and stimulation optimization strategies as well as discuss the future trends in reservoir stimulation



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 enhanced recovery and reservoir treatment for stimulation engineers and reservoir engineers, production engineers and well intervention engineers, petroleum engineers and field development engineers, fracturing and acidizing supervisors, operations engineers and technical support staff, geoscientists and petrophysicists working on reservoir performance, asset managers and team leaders overseeing production optimization, well services and completion engineers, service company personnel involved in stimulation services, technical consultants and specialists in enhanced oil recovery (EOR) and other technical staff.

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 Fee

US\$ 8,800 per Delegate + **VAT**. 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 Certificate(s)

- (1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Successful candidate will be certified as a “*Certified Stimulation Engineer*”. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

*Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology **

 **Haward Technology Middle East**
Continuing Professional Development (HTME-CPD)

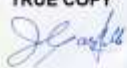
CEUs

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-24
HTME No. 74851
Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
DE1091	Stimulation Engineer: Enhanced Recovery & Reservoir Treatment	Nov 10-14, 2024	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Jaryl Castillo
Academic Director

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



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Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

-  British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

-  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.



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. John Petrus, PhD, MSc, BSc, is a **Senior Reservoir Engineer & Geologist** with over **30 years of onshore & offshore** experience within the **Oil & Gas, Refinery and Petroleum** industries. His wide experience covers in the areas of **Advanced Well Testing & Interpretation, Production Technology & Engineering, Well Completions, Well Logs, Well Stimulation & Production Logging, Well Completion Design & Operation, Well Surveillance, Well Testing, Well Stimulation & Control and Workover Planning, Completions & Workover, Hole Cleaning & Logging, Servicing and Work-Over Operations, Wellhead Operations, Maintenance & Testing, Petrophysics/Interpretation of Well Composite, Reservoir & Tubing Performance, Practical Reservoir Engineering, Clastic Exploration & Reservoir Sedimentology, Carbonate Reservoir Characterization &**

Modeling, Seismic Interpretation, Mapping & Reservoir Modelling, Reservoir Geology, Integrating Geoscience into Carbonate Reservoir Management, Faulted & Fractured Reservoirs, Fractured Hydrocarbon Reservoirs, Analyses, Characterisation & Modelling of Fractured Reservoirs & Prospects, Fracture Reservoir Modeling Using Petrel, Reservoir Engineering Applied Research, Artificial Lift, Artificial Lift System Selection & Design, Electrical Submersible Pumps (ESP), Enhance Oil Recovery (EOR), Hydraulic Fracturing, Sand Control Techniques, Perforating Methods & Design, Perforating Operations, Petroleum Exploration & Production, Hydrocarbon Exploration & Production, Exploration & Production, Play Assessment & Prospect Evaluation, Formation Evaluation, Petroleum Engineering Practices, Petroleum Hydrogeology & Hydrodynamics, Project Uncertainty, Decision Analysis & Risk Management, Decision Analysis & Uncertainty Management, Exploration & Development Geology, Sedimentology & Sequence Stratigraphy, Structural Interpretation in Exploration & Development, Petrel Geology, Geomodeling, Structural Geology, Applied Structural Geology in Hydrocarbon Exploration, Petrophysics, Geology of the Oil & Gas Field, Geophysics, Geothermal, Geochemical & Geo-Engineering and Drilling Applied Research, Field Geological Outcrop Mapping & Digital Cartography, Geological Modelling, Geoscience Management in E&P, Geoscience Modelling, Geological Mapping, Structural Geology-Tectonics, Structural Analysis, Tectonic Modelling and Numerical Simulation of Fractured Prospects & Reservoirs, Fracture Network Analysis & Modelling, Prospect Generation, Global Networking, Research and Technology Development Management for Fault & Fracture Analyses & Modelling, Fracture Modelling, Dynamic Modelling, Field Development Planning, Water Injection Planning, Stereophotogrammetry, Fault Mapping, GPS Survey, 2D & 3D Seismic Acquisition & Processing, 3D Seismic Surveys & Mapping, 3D GIS, GMAP, Sandbox Modelling, Sedimentological Logging, GR Logging, Surface & Subsurface 3D Modelling, Best Practices Management System (BPMS), Subsurface Work for Energy Projects, Digitalization Projects, Structural Model using Petrel, G&G Seismic & Well Data Modelling, GIS System Management, Database Management, Strategic Planning, Best Practices and Workflow, Quality Management, Project Management and Risk Assessment & Uncertainty Evaluation. Further, he is also well-versed in **seismic interpretation, mapping & reservoir modelling tools like **Petrel software, LandMark, Seisworks, Geoframe, Zmap** and has extensive knowledge in **MSDos, Unix, AutoCAD, MAP, Overlay, Quicksurf, 3DStudio, Esri ArcGIS, Visual Lisp, Fortran-77 and Clipper**. Moreover, he is a world **expert** in **analysis and modelling of fractured prospects and reservoirs** and a **specialist and developer of fracture modelling software tools** such as **FPDM, FMX and DMX Protocols**.**

During his career life, Dr. Petrus held significant positions and dedication as the **Executive Director, Senior Geoscience Advisor, Exploration Manager, Project Manager, Manager, Chief Geologist, Chief of Exploration, Chief of Geoscience, Senior Geosciences Engineer, Senior Explorationist, Senior Geologist, Geologist, Senior Geoscientist, Geomodeler, Geoscientist, CPR Editor, Resources Auditor, Project Leader, Technical Leader, Team Leader, Scientific Researcher and Senior Instructor/Trainer** from various international companies and universities such as the **Dragon Oil Holding Plc., ENOC, MENA, ENI Group of Companies, Ocre Geoscience Services (OGS), Burren RPL, Ministry of Oil-Iraq, Eni Corporate University, Stanford University, European Universities, European Research Institutes, NorskHydro Oil Company, Oil E&P Companies**, just to name a few.

Dr. Petrus has a **PhD in Geology and Tectonophysics** and **Master's and Bachelor's degree in Earth Sciences** from the **Utrecht University, The Netherlands**. Further, he is a **Certified Instructor/Trainer, a Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management (ILM)**, a **Secretary and Treasurer of Board of Directors of Multicultural Centre, Association Steunfonds SSH/SSR and Founding Member of Sfera Association**. He has further published several scientific publications, journals, research papers and books and delivered numerous trainings, workshops, courses, seminars and conferences internationally.

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: Monday, 26th of January 2026

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to Reservoir Stimulation Purpose & Benefits of Stimulation • Types: Matrix versus Fracturing Stimulation • Historical Development & Industry Trends • Stimulation's Role in Well Productivity
0930 – 0945	Break
0945 – 1030	Reservoir Characterization for Stimulation Porosity & Permeability Profiles • Lithology & Rock Mechanics • Fluid Properties & Saturation • Well Logs & Core Data Interpretation
1030 – 1130	Enhanced Oil Recovery (EOR) Principles Primary, Secondary & Tertiary Recovery • Mechanisms of EOR: Miscible, Chemical, Thermal • Selection Criteria for EOR Methods • Reservoir Screening for EOR
1130 – 1215	Matrix Acidizing Fundamentals Acid Types: HCl HF Organic Blends • Reaction Mechanisms & Kinetics • Formation Damage Removal • Treatment Design & Execution
1215 – 1230	Break
1230 – 1330	Fracture Stimulation Fundamentals Hydraulic Fracturing Basics • Fracture Propagation Models • Proppant Selection & Placement • Fracture Diagnostics Techniques
1330 – 1420	Wellbore Preparation & Candidate Selection Reservoir & Well Candidate Screening • Mechanical Integrity Checks • Cleanout & Wellbore Conditioning • Pre-Stimulation Testing & Evaluation
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2: Tuesday, 27th of January 2026

0730 – 0830	Rock Mechanics & Fracture Geometry Stress Profile & Fracture Gradient • Young's Modulus & Poisson's Ratio • Fracture Height Containment • Natural Fractures & Stress Anisotropy
0830 – 0930	Fracturing Fluids & Additives Fluid Types: Gelled, Slickwater, Hybrid • Additives: Crosslinkers, Breakers, Surfactants • Fluid Rheology & Temperature Stability • Fluid Compatibility with Formation
0930 – 0945	Break
0945 – 1100	Proppant Selection & Transport Types: Sand, Ceramic, Resin-Coated • Strength & Conductivity • Settling Velocity & Transport Mechanisms • Proppant Placement Strategies

1100 – 1215	Fracturing Equipment & Surface Setup Pumps & Blending Units • Sand Handling Systems • Frac Tree & Manifold Setups • Data Acquisition & Monitoring Systems
1215 – 1230	Break
1230 – 1330	Real-Time Monitoring & Data Acquisition Pressure & Rate Monitoring • Microseismic Fracture Mapping • Surface & Downhole Diagnostics • Data Interpretation & Adjustments
1330 – 1420	Fracture Treatment Evaluation & Diagnostics Step-Rate Tests & Mini-Frac • Net Pressure Analysis • Fracture Length & Width Estimation • Post-Job Evaluation Techniques
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3: Wednesday, 28th of January 2026

0730 – 0830	Acidizing Techniques & Applications Matrix Acidizing versus Acid Fracturing • Formation Type: Carbonate versus Sandstone • Emulsified & Foamed Acid Systems • Acid Diversion & Zonal Coverage
0830 – 0930	Acid-Rock Interaction & Reaction Kinetics Reaction Products & Precipitation Risks • Wormholing in Carbonate Formations • Spent Acid Cleanup Requirements • Kinetic versus Mass Transport Limitations
0930 – 0945	Break
0945 – 1100	Acidizing Additives & Compatibility Corrosion Inhibitors & Iron Control • Mutual Solvents & Surfactants • Scale Inhibitors & Clay Stabilizers • Additive Compatibility Testing
1100 – 1215	Sandstone Acidizing Design Mud Acid System Components • Preflush, Main Acid & Overflush Stages • Clay Stabilization Techniques • Post-Treatment Flowback Management
1215 – 1230	Break
1230 – 1330	Acid Placement Methods Bullheading versus Coiled Tubing • Diversion: Ball Sealers, Foam, Chemical • Zonal Isolation Techniques • Acid Volume Calculation & Placement
1330 – 1420	Health Safety & Environmental Concerns Chemical Handling Protocols • H ₂ S & Acid Vapor Hazards • Spill Prevention & Containment • Waste Fluid Handling & Disposal
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

Day 4: Thursday, 29th of January 2026

0730 – 0830	Chemical EOR Methods Polymer Flooding • Surfactant-Polymer Systems • Alkaline-Surfactant-Polymer (ASP) • Chemical Retention & Adsorption Issues
0830 – 0930	Thermal EOR Techniques Steam Injection: Cyclic, Continuous, SAGD • In-Situ Combustion • Heat Losses & Operational Limitations • Thermal Simulation Models

0930 – 0945	Break
0945 – 1100	Gas Injection Methods CO ₂ Injection: Miscible & Immiscible • Nitrogen & Flue Gas Injection • Minimum Miscibility Pressure (MMP) • Gas Mobility Control Strategies
1100 – 1215	Foam & Microbial EOR Foam Stability & Injection Techniques • In-Situ Microbial Activity & Oil Recovery • Bacteria Selection & Nutrient Management • Compatibility with Reservoir Conditions
1215 – 1230	Break
1230 – 1330	EOR Pilot Design & Monitoring Screening Criteria for Pilot Sites • Injection Well Design • Monitoring: Pressure, Production, Tracer • Pilot to Full-Field Scale-Up
1330 – 1420	Integration of EOR with Stimulation Programs Post-Stimulation EOR Synergy • Reservoir Compatibility Assessment • Production Data Analysis & Optimization • Long-Term Recovery Performance Tracking
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

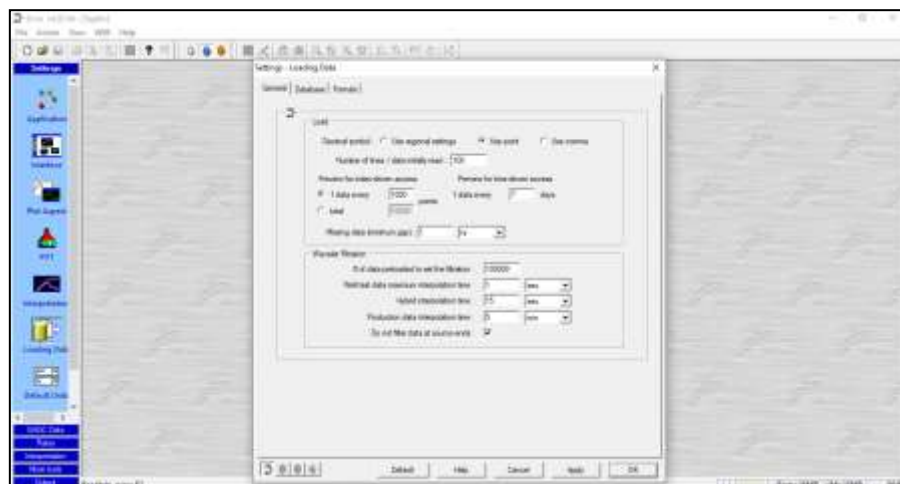
Day 5: Friday, 30th of January 2026

0730 – 0830	Production Logging & Surveillance Tools PLT, Spinner, Temperature & Noise Logs • Tracer Injection & Production Profiling • Distributed Temperature Sensing (DTS) • Fiber Optic Monitoring
0830 – 0930	Post-Stimulation Well Testing & Analysis Pressure Transient Analysis (PTA) • Diagnostic Fracture Injection Test (DFIT) • Decline Curve Analysis (DCA) • Flow Assurance & Productivity Index
0930 – 0945	Break
0945 – 1100	Stimulation Optimization Strategies Re-Fracturing Candidate Identification • Stimulation Timing & Sequence • Multistage Fracture Optimization • Cost versus Recovery Trade-Offs
1100 – 1200	Stimulation Design Software & Modeling FracCADE StimPlan GOHFER Basics • 3D Fracture Modeling • Acidizing Simulation Tools • Data Input Calibration & Validation
1200 – 1215	Break
1215 – 1230	Case Studies: Global Reservoir Treatment Practices Tight Gas Fracturing Success Story • Matrix Acidizing in Carbonate Reservoirs • Chemical EOR Integration Example • Horizontal Well Multistage Fracturing
1230 – 1300	Future Trends in Reservoir Stimulation Machine Learning in Stimulation Design • Smart Completions & Digital Fracturing • Environmentally Friendly Stimulation Fluids • Real-Time Adaptive Stimulation Systems
1300 – 1315	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1315 – 1415	COMPETENCY EXAM
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

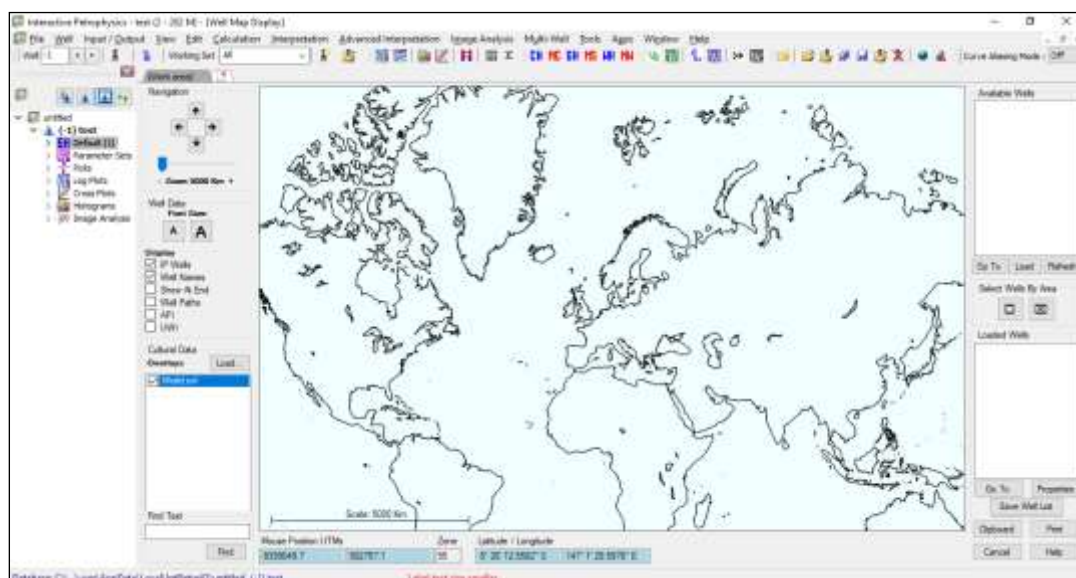


Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the “KAPPA”, “Interactive Petrophysics (IP)” and “PROSPER” software’s.



KAPPA Ecrin v4.02.04



Interactive Petrophysics (IP) Software





PROSPER

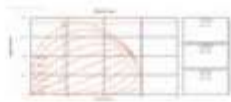


MULTIPHASE WELL AND PIPELINE NODAL ANALYSIS

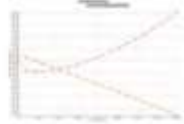
WELL AND PIPELINE MODELS



FULLY COMPOSITIONAL

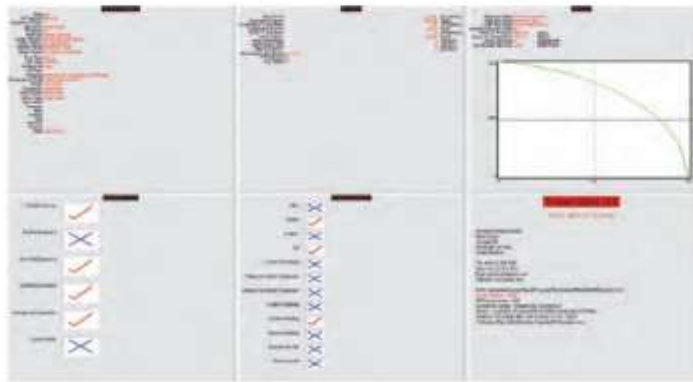


INFLOW/OUTFLOW RESPONSE



STEAM WELLS





OUTFLOW (VLPs) MODELS



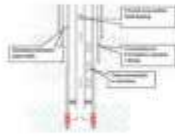
FLOW ASSURANCE



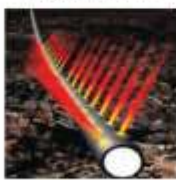
ARTIFICIAL LIFT SYSTEMS



THERMAL MODELLING



PERFORATION DESIGN AND PERFORMANCE



MULTILATERAL COMPLETIONS



INFLOW (IPRs) MODELS



Course Coordinator

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