Advanced Well Log Interpretation & Formation Evaluation Techniques

Improved techniques in effective petrophysics input & integration to maximize oil recovery

23rd June 2014 - 27th June 2014, Jakarta, Indonesia

Petrosync Distinguished Instructor
Dr. Ahmed Taha Amin
President, Godomex
International Consultant Petrophysicist

- Over 35 years of experience in Oil & Gas industry
- Specializes in formation evaluation, core analysis and reservoir modeling
- Handled technical & managerial positions in GUPCO, ADCO & ADNOC, QGPC, Apache and RPS Energy

Course Objectives

- Drive a consistent and effective Petrophysics inputs to improve oil recovery
- Understand rock properties and pore geometry
- Capitalize on integration reservoir and petrophysical data to maximize economic recovery of hydrocarbons
- Attain the knowledge and practical use of total and effective porosity calculation
- Determine and understand new techniques and tools in well logging including imaging logging tools
- Acquire knowledge on permeability and rock quality interpretation
- Learn and practice integration of core analysis and open-hole logs
- Knowledge on hydrocarbon typing and saturation estimation
- Understand formation pressure selection, interpretation and pressure correlation
- Learn from practical experiences and case studies scenarios

Specially Designed for

The course is designed for all professionals with background and experience in petrophysics, whose job requires more extensive knowledge of core and log relations. They include petrophysicists, well log analysts, geologists, geophysicists, geoscientists, reservoir engineers, petroleum engineers and other E&P professionals.
Well logs are detailed record of the geologic formations by a borehole. These are comprehensive and important data gathered in any phase of a well’s history to identify petrophysical properties which in turn defines the economic value of a reservoir. The techniques in analysis and interpretation of well logs are therefore essential in identification of hydrocarbon recovery.

In the E&P business, integrated petroleum engineering studies and field development plans are management tools which are used to maximize economic recovery of hydrocarbons. Petrophysical engineers fulfill a key role in analyzing and interpreting subsurface reservoir data, which form the basis for reservoir models. E&P technical staff and team leaders involved in integrated studies require more than general skills in petrophysical and interpretation techniques to produce quality input to development plans.

The trainer will provide understanding of practical and new techniques and tools in well logging with the support of case studies. At the end of the course, participants will be able to quantitatively identify the reservoir quality, measure the storage capacity of the reservoir through integrating the reservoir and petrophysical data and to improve oil recovery.

Why you should attend?

Analysis and interpretation of well logs are critical and essential to any oil & gas exploration. This course is customized specially to learn how to apply measurements and physics of well logging tools to methods for interpretation of these parameters. The understanding of techniques in analysis and interpretation as well as practice of integration of core analysis and open-hole logs will provide extensive knowledge of the topic to participants. The trainer will also provide the interpretation of cased-hole logs and recent tools for reservoir performance, production and to solve diagnostic problems. The trainer will provide information for optimum use of well logs to maximize and improved oil recovery.

Testimonials

“Dr. Ahmed has an excellent experience and presentation skills.”

“The course information and Dr. Ahmed’s experiences has been well-delivered & shared to us.”

“The examples and case studies from past experience of Dr. Ahmed are very valuable.”

<table>
<thead>
<tr>
<th>DATE</th>
<th>COURSE TITLE</th>
<th>INSTRUCTOR</th>
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<tbody>
<tr>
<td>17th – 21st Mar</td>
<td>Special Core Analysis</td>
<td>Jos Maas</td>
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<tr>
<td>24th – 27th Mar</td>
<td>Integration of Petrophysics &amp; Core Analysis</td>
<td>Ahmed Taha</td>
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<tr>
<td>5th – 9th May</td>
<td>Advanced Cased Hole Logging Interpretation &amp; Application</td>
<td>Mourad Wassef</td>
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<td>9th – 13th June</td>
<td>Advanced Logging Tool Physics</td>
<td>Richard Bateman</td>
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<tr>
<td>23rd – 27th June</td>
<td>Advanced Well Log Interpretation &amp; Formation Evaluation</td>
<td>Ahmed Taha</td>
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<tr>
<td>11th – 15th Aug</td>
<td>Geomechanics</td>
<td>Richard Bateman</td>
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<td>22nd – 25th Sep</td>
<td>NMR Petrophysics Application</td>
<td>Ayham Ash</td>
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<td>6th – 9th Oct</td>
<td>Petrophysics Operations Quality Control</td>
<td>Ahmed Taha</td>
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<tr>
<td>27th – 31st Oct</td>
<td>Petrophysics in Unconventional Reservoirs</td>
<td>Mourad Wassef</td>
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<tr>
<td>24th – 28th Nov</td>
<td>Advanced Production Logging</td>
<td>Mourad Wassef</td>
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23rd - 27th JUNE 2014, Jakarta, Indonesia

Course Agenda

Day One - 23rd June 2014

Petrophysics & Rock Properties

- Porosity Types
- Wettability and Connate Water
- Permeability
- Permeability and porosity relationship
- Resistivity
- Fluid Saturations

Q & A

Open-Hole Logging Tools

Definition, measurements, application, equations of the following tools:

- Lithology Tools: GR, NGT, SP
- Porosity Tools: BHC, FDC, CNL
- Resistivity Tools: DLL, DIL, MSFL
- Other Tools: EPT

Exercises: Calculations of GR, SP, Sonic, etc.

Logging While Drilling (LWD)

- Lithology Tools
- Resistivity Tools
- Porosity Tools

Q & A

Day Two - 24th June 2014

Logging Operations and Quality Control

- Logging Tools Operations
- Log Quality Control

Quick Look Well Log Interpretation

- Lithology interpretation
- Porosity calculations

Practical Exercises

Cased-Hole Logging Tools

Definition, measurements, application, equations of the following tools:

- Thermal Decay Time (TDT, RST)
- Cement Bond (CBL-VDL)
- Production Logging (PLT)
  - Flowmeters
  - Gradiomanometer
  - Manometer
  - Thermometer
- Casing Collar, Gamma Ray and Caliper
- Porosity tools in casing (Neutron & Sonic)
- Lithology tools in casing (GR & NGT)

Practical Exercises and Q & A

Day Three - 25th June 2014

Recent and Advanced Tools

Definition, measurements, application, equations of the following tools:

- Geological Tools: Dipmeter, FMS, FMI, ECS
- Sedimentary sequence and depositional environment
- Resistivity Tools: HRLA, ARI, AIT
- Porosity Tools: APS, LDT, DSI
- Hydrocarbon Evaluation Tools: NMR, CMR, MDT, RFT

Practical Exercises and Q & A

IN-HOUSE SOLUTIONS

SAVE COST • IMPROVE PERFORMANCE • REDUCE RISK

PetroSync understands that in current economic climate, getting an excellent return on your training investment is critical for all our clients. This excellent training can be conducted exclusively for your organization. The training can be tailored to meet your specific needs at your preferred location and time. We will meet you anywhere around the globe.

If you like to know more about this excellent program, please contact us on +65 6415 4502 or email general@petrosync.com
Formation Evaluation

- Rock Physics (from core and log)
- Porosity Types
- Permeability
- Permeability and Porosity Relationships
- Fluid Saturation
- Lithology Interpretation Vsh Calculation
- Rw determination methods
- Petrophysical parameters (a, m, n)
- Archie’s Relationship

Core Analysis and Core-Log Relationships

Exercises and Q & A

Day Four- 26th June 2014

Advanced Formation Evaluation

Reservoir Petrophysical Model Evaluation

- Modern Approaches and Techniques in Petrophysics
- Multi-Well Bases Study Using:
  - Multi-Well Data-Base
  - Key Well Study
- Data Normalization
- Variable Petrophysical Parameter values
- Standardization of Petrophysical Parameters

- Lithology Determination
  - Lithology Model
  - Lithological Parameters

- Petrophysical Parameters Determination
  - Archie’s Parameters
  - Most Problematic Parameters
  - Old Methods (Constant Value)
  - New Methods (Variable Values)

Day Five - 27th June 2014

Computer Processed Interpretation (CPI)

- Hydrocarbon Quality
- Fluid Contacts (GOC-GWC-OWC-ODT-WUT-FWL)
- Reservoir Summations
- CPI examples
- CPI Results quality check

Practical Training Exercise & Case Studies Including:

- Practical Training on Cased Hole Logging Tools
- Practical Training on Quick Look Interpretation
- Case Study for International Examples and Unconventional Reservoirs:
  - Carbonate reservoir (Limestone) from Gulf area
  - Clastics reservoir (Sandstone) from Egypt
  - Gas Sandstone reservoir from South Africa

WHY YOU SHOULD ATTEND PETROSYNC’S EVENTS

- To ensure that all objectives of the course matches yours, all PetroSync programs are developed after intensive and extensive research within the industry
- PetroSync programs focus on your immediate working issues to ensure that you are able to apply and deliver immediate results in real work situations
- Application and implementation of industry knowledge and experience are the drivers for our course design, not theoretical academic lectures
- PetroSync training focuses on practical interactive learning tools and techniques including case studies, group discussions, scenarios, simulations, practical exercises and knowledge assessments during the course. Invest a small amount of your time to prepare before attending the course to ensure maximum learning
- PetroSync follows a rigorous selection process to ensure that all expert trainers have first-hand, up-to-date and practical knowledge and are leaders of their respective industrial discipline
Dr. Ahmed Taha Amin has over 35 years in industry, principally in log analysis and formation evaluation in various technical and managerial positions for GUPCO (Cairo, Egypt), ADCO & ADNOC (Cairo, Egypt), QGPC (Doha, Qatar), Apache (Cairo, Egypt) and RPS Energy (UK). He specializes in formation evaluation, core analysis and reservoir modeling. He is formerly a Senior Lecturer Petrophysics in the Department of Physics at the Alexandria University and Geological Department at Cairo University. Senior Instructor for many in house and international courses in Petrophysics with major international training companies. Dr. Ahmed had executed training courses for RPS, Cepsa, Repsol, Sasol 5A, El-Furat, Sudapet and he was a Senior Advisor Petrophysicist in Apache Egypt Companies.

He has broad experience working with assets and providing properties for reservoir characterization. Dr. Ahmed is completely familiar with operational aspects of logging and log interpretation with strong experience with carbonate petrophysics after 15 years experience in the Middle East.

He had done numerous industry courses in Petrophysics Logging, Log Analysis, Geology, Geophysics, Reservoir Engineering and publication in petrophysical topics. Currently, Dr. Ahmed is working as an independent consultant petrophysicist with CEPSA, Aminex, TPS and IPR International. At the same time working as associate principle petrophysicist with RPS for international projects (Sasol Johannesburg)

HIS PROFESSIONAL MEMBERSHIP/AFFILIATIONS
- American Association of Petroleum Geologists (AAPG)
- Society of Petrophysicist & Well Log Analysis (SPWLA)
- Society of Petroleum Engineers (SPE)
- Egyptian Society of Applied Petrophysics (ESAP)
- Egyptian Petroleum Exploration Society (EPEX)

HIS CLIENT LIST
- ARAMCO (Cairo)
- Petronas (Sudan)
- ADCO (UAE)
- Cairn Energy
- Cepsa (Madrid)
- Hess & Nalpetco
- Sasol
- Cuu Long Joc (UK)
- RPS Energy (UK)
- Dana Gas
- Qatar Petroleum
- EGPC
- EGAS
- Petrobel
- Qarun
- Repsol (Madrid)
- Al Furat Petroleum Co.
- Sudapet
- CCED
- BGFCL
- PetroGulf
- Ganoub
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INVESTMENT PACKAGES

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<tr>
<th>Investment Package</th>
<th>Deadline</th>
<th>Course Fee</th>
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<tbody>
<tr>
<td>Standard Price</td>
<td>20th Jun 2014</td>
<td>SGD $ 5,995</td>
</tr>
<tr>
<td>Early Bird Offer</td>
<td>23rd May 2014</td>
<td>SGD $ 5,795</td>
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<tr>
<td>Group Discount (3 or more Delegates)</td>
<td>20th Jun 2014</td>
<td>10% discount for groups of 3 registering from the same organization at the same time</td>
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Group Discount is based on Standard Price

- To enjoy the promotion & discount offer, payment must be made before deadline
- For 7 or more delegates, please inquire for more attractive package.
- Prices include lunches, refreshments and materials. Promotion & discount cannot be combined with other promotional offers.
- Important: Please note that registration without payment will incur a SGD 200 administration fee.

DELEGATES DETAILS

1st Delegate Name: Mr  ☐  Mrs  ☐  Ms  ☐  Dr  ☐  Others  ☐
Direct Line Number: __________________________ Email: __________________________
Job Title: __________________________ Department: __________________________
Head of Department: __________________________

2nd Delegate Name: Mr  ☐  Mrs  ☐  Ms  ☐  Dr  ☐  Others  ☐
Direct Line Number: __________________________ Email: __________________________
Job Title: __________________________ Department: __________________________
Head of Department: __________________________

3rd Delegate Name: Mr  ☐  Mrs  ☐  Ms  ☐  Dr  ☐  Others  ☐
Direct Line Number: __________________________ Email: __________________________
Job Title: __________________________ Department: __________________________
Head of Department: __________________________

INVOICE DETAILS

Attention Invoice to: __________________________
Direct Line Number: __________________________ Fax: __________________________
Company: __________________________ Industry: __________________________
Address: __________________________ Postcode: __________________________
Country: __________________________ Email: __________________________

Please note:
- Indicate if you have already registered by Phone ☐ Fax ☐ Email ☐ Web ☐
- If you have not received an acknowledgement before the training, please call us to confirm your booking.

PAYMENT METHODS

☐ By Credit Card :
   Please debit my credit card:  ☐ Visa  ☐ MasterCard  ☐ AMEX
   Security Code: ________________
   Card Number: ________________
   Expiry Date: ________________
   Name printed on card: __________________________

☐ By Direct Transfer : Please quote invoice number(s) on remittance advice
   PetroSync LLP Bank details:
   Account Name: PetroSync LLP
   Bank Number: 7144 • Branch Code: 013 • Account No: 13-1-005531-6
   Name of Correspondent Bank : Standard Chartered Bank, 6 Battery Road, Singapore 049909
   SWIFT Code of Correspondent Bank: SCBLSGSGXXX
   All bank charges to be borne by payer. Please ensure that PetroSync LLP receives the full invoiced amount.

I agree to PetroSync’s terms & conditions, payment terms and cancellation policy.

Authorized Signature : __________________________
PAYMENT TERMS : Payment is due in full at the time of registration. Full payment is mandatory for event attendance.

TERMS AND CONDITIONS

DISCLAIMER
Please note that trainers and topics were confirmed at the time of publishing; however, PetroSync may necessitate substitutions, alterations or cancellations of the trainers or topics. As such, PetroSync reserves the right to change or cancel any part of its published programme due to unforeseen circumstances. Any substitutions or alterations will be updated on our web page as soon as possible.

DATA PROTECTION
The information you provide will be safeguarded by PetroSync that may be used to keep you informed of relevant products and services. As an international group we may transfer your data on a global basis for the purpose indicated above. If you do not want us to share your information with other reputable companies, please tick this box.

CANCELLATION POLICY
You may substitute delegates at any time as long as reasonable advance notice is given to PetroSync. For any cancellation received in writing not less than fourteen (14) working days prior to the training course, you will receive credit voucher less a SGD $200 administration fee and any related bank or credit card charges.

Delegates who cancel less than fourteen (14) working days of the training course, or who do not attend the course, are liable to pay the full course fee and no refunds will be granted.

In the event that PetroSync cancels or postpones an event for any reason and that the delegate is unable or unwilling to attend on the rescheduled date, you will receive a credit voucher for 100% of the contract fee paid. You may use this credit voucher for another PetroSync to be mutually agreed with PetroSync, which must occur within a year from the date of postponement.

PetroSync is not responsible for any loss or damage as a result of the cancellation policy. PetroSync will assume no liability whatsoever in the event this event is cancelled, rescheduled or postponed due to any Act of God, fire, act of government or state, war, civil commotion, insurrection, embargo, industrial action, or any other reason beyond management control.

CERTIFICATE OF ATTENDANCE
A minimum of 70% attendance is required prior issuance of PetroSync’s Certificate.

DETAILS

Please accept our apologies for mail or email that is incorrectly addressed. Please email us at registration@petrosync.com and inform us of any incorrect details. We will amend them accordingly.

CHARGES & FEE(s)

☐ For Payment by Direct Telegraphic Transfer, client has to bear both local and overseas bank charges.
☐ For credit card payment, there is additional 4% credit card processing fee.

Course Confirmation