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Artificial Lift Intelligence for Production Optimisation

>>Registration deadline: 12 September 2009

>>Register by fax, email or online at www.spe.org/atws



Workshop Abstract

Artificial lift technologies are designed to mitigate risk and expand the operating limits of conventional lifting systems. Coupled with an understanding that intelligent control is not exclusive to complex and highly instrumental wells, its application also has the potential to revolutionise production practices in mature and/or remote fields. Although it was a sophisticated idea that was not widely accepted when this initiative started, artificial lift intelligence with real-time production monitoring and surveillance technology was vastly developing worldwide. The E&P industry anticipated that the deployment of intelligent lifting systems and techniques has been significantly increasing within the past five years, leading to complex decision support tools to enable optimisations. Applying real-time production operations with artificial lift intelligence and advanced approaches has shown values in optimising production, minimising the wells down-time and deferred oil, and reducing operating costs of producing wells and fields.

Workshop Objectives

The workshop will address how artificial lift technologies and intelligent production systems that enable data acquisition, interpretation, knowledge management and decision making in real-time for production optimisations have been deployed so far regionally as well as globally.

With the growing interest and regional focus in real-time production optimisation, the workshop will help identify key lessons learned and look at the way forward for successful intelligent production optimisation.

Topics covered will include:

- Lessons learned from world class operations
- Artificial lift design concept, selection criteria, efficiency, challenges, limitations and requirements
- Real-time application, monitoring and interaction for integrated production optimisation
- Benchmarking and determining clear and standard performance metrics

Mission Statement

To create and conduct a workshop on artificial lift intelligence for production optimisation that will benefit Middle East oil and gas professionals by taking related production real-time and continuous reservoir monitoring/control technical interest to the next level. The first ATW is scheduled to take place in October 2009 in Egypt. Subsequently the second workshop will take place in October/November 2010. A comprehensive, full conference will take place in Q1 of 2012 and this will be a biennial event taking place in Q1 of even years.

Who Should Attend

Engineers involved in all and/or any of the following upstream activities:

- Production Operations and Planning
- Artificial Lift Design and Planning
- Production Surveillance and Optimisation
- Reservoir Management

Special Early Bird Offer!

Register Now!

2-3 Delegates receive 15% Discount
4-5 Delegates receive 20% Discount
Over 5 Delegates receive 25% Discount

For more information on how to register email: rkamal@spe.org

General Information

Format:

Two (2) days of informal discussions prompted by selected keynote presentations and discussion leaders including a networking function on Tuesday, 13 October 2009.

Poster Sessions:

The Steering Committee encourages registrations from professionals who are able to prepare and present a poster on a relevant project. Details of the poster size and facilities will be provided in the joining instructions.

Attendance:

Registrations will be accepted on a first-come first-served basis. The Steering Committee encourages attendance from those who can contribute to the workshop most effectively either in discussions or with posters. A mix of attendees in terms of geographic origin, companies and disciplines will be encouraged.

Documentation:

- Proceedings will not be published; therefore, formal papers and handouts are not expected from speakers.
- Work in progress, new ideas and interesting projects are sought.
- Professionally-prepared visual aids are not required; handwritten view graphs are entirely acceptable.
- Note-taking by participants is encouraged.

Workshop Deliverables:

- The Steering Committee will appoint a "scribe" to record the discussions and to produce the full workshop report for SPE.
- This report will be circulated to all attendees as the workshop deliverable within 4–6 weeks following the workshop. The copyright of the report is with SPE.
- PowerPoint presentation materials will be posted on a specific SPE URL address after the workshop.
- Provision of the materials by the speakers will signify their permission for SPE to do so.

Commercialism:

In keeping with ATW objectives and the SPE mission, commercialism in posters or presentations will not be permitted. Company logos must be limited to the title slide and used only to indicate the affiliation of the presenter and others involved in the work.

Attendance Certificate:

All attendees will receive an attendance certificate attesting to their participation in the workshop. This certificate will be provided in exchange for a completed Workshop Questionnaire.

Continuing Education Units:

Attendees at this workshop qualify for SPE Continuing Education Units (CEU) at the rate of 0.1 CEU per hour of the Workshop.

Registration Information:

The fee includes the following:

- All workshop sessions
- Networking hour on 13 October 2009
- Daily coffee breaks and luncheons
- Workshop workbook

Note: Registration fee does NOT include hotel accommodation for attendees.

1-Day Masterclass:

International: Egyptian Nationals or Non-Egyptian Nationals based outside Egypt

SPE members	USD 450
Non-members	USD 550

2-Day Workshop (Excluding the Master Class):

National: Egyptian Nationals Based in Egypt

SPE Members	EGP 3,000
SPE Non-Members	EGP 3,300

International: Egyptian Nationals or Non-Egyptian Nationals based outside Egypt

SPE Members	USD 1,100
SPE Non-Members	USD 1,200

3-Day Workshop (Including the Master Class):

National: Egyptian Nationals based in Egypt

SPE members	EGP 3,600
Non-members	EGP 3,900

International: Egyptian Nationals or Non-Egyptian Nationals based outside Egypt

SPE members	USD 1,450
Non-members	USD 1,550

Registration Policy:

- Registration fee **MUST** be paid in advance for attending the Applied Technology Workshop.
- Full fixed fee is charged regardless of the length of time that the registrant attends the workshop.
- Fixed fee cannot be prorated or reduced for anyone (workshop co-chairpersons, committee members, speakers, discussion leaders, students and registrants).
- Attendees are expected to attend all workshop sessions and are not permitted to attend on a partial basis.

Cancellation and Refund Policy:

- a) A processing fee of **USD 100** will be charged for cancellations received before the registration deadline **12 September 2009**.
- b) For cancellations received after the registration deadline, **12 September 2009**, 25% refund will be made to the registrant.
- c) No refund on cancellations received within seven (7) days prior to the Workshop date, i.e. on or after **5 October 2009**.
- d) No refund will be issued if a registrant fails to attend the Workshop.

Workshop Venue:

JW Marriott Hotel, a luxurious 5-star corporate resort is nestled in the prestigious Heliopolis district just 7 minutes away from the airport and close to many attractions.

JW Marriott Hotel

Ring Road, Mirage City
P.O.Box 427, 11757 Heliopolis
Cairo, Egypt
Phone: +2.02.2411.5588
Fax: +2.02.2411.2266
Toll-free: +2.02.2510.0200
Website: www.jwmarriottcairo.com

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Tentative Technical Agenda

Tuesday, 13 October 2009

Session 1: Advanced Lifting System – Lessons Learned and the Way Forward

Tools, people and processes are paramount to achieve integrated artificial lift optimisation that delivers better lift system and reservoir performance for artificially lifted wells. It combines the latest technology in downhole monitoring systems and artificial lift technology with reservoir expertise. Downhole multi-sensors are used to capture relevant lift systems and reservoir parameters, and the data is transmitted in real-time to provide 24/7 surveillance and the opportunity to identify candidate wells for artificial lift optimisation. Remote communication and control at the well site in real-time provides the ability to access and set operational alarms on the downhole and surface system. Hence it enables a single surveillance engineer to proactively monitor several hundred wells. With additional support of an artificial lift surveillance center and collaborative knowledge hub, monitoring and analysis of the data from connected wells can be utilised to ensure their continued production. Recommendations based on this performance analysis can be implemented remotely, often resulting in immediate production increases.

Session 2: Benchmarking and Determining Standard Performance Metrics

As we all know the pumps are a small component of the overall equation. It is about decreasing total cost of ownership. One element is the pump but electricity or power consumption costs are important to look at and control. Workover cost can run high. Imagine the impact of having a “hit list” of wells to work on or the impact on production for each of them or which pumps will fail early. Is there any way you can pro-actively schedule the workover rig rotation; and of course deferred oil. An important component whether you would like to either produce more today or better manage the reservoir depletion over the long term. Benchmarking performance, such as run life of artificial lift systems has become more commonplace in the E&P companies base management plan. Key Performance Indicators (KPIs) have quickly found their way into the artificial lift arena. The use of root cause analysis and before failure analysis have become more popular and more enhanced by operating companies in an all out attempt to increase the run life, lower operating cost, and minimise deferred oil. However, regional operating practices, cost structures, infrastructures, and economic drivers certainly come into play when analysing an artificial lift system performance. The actual overall cost of a system failure can vary substantially in different location across the region.

Wednesday, 14 October 2009

Session 3: Integrated Artificial Lift Production Optimisation

More than 80% of the world's oil wells are placed on some kind of artificial lift. The most significant of which are ESP, gas lift and sucker-rod pump. In order to reach maximum profit from such installations, production engineers are required to design and operate the application at their peak efficiencies. To achieve this goal, thorough understanding of the basic design of the different lifting methods, as well as proper skills to improve field production to reach optimum conditions are required. Flow assurance in real time is one of the successful systems used to optimise the production and improve performance of the well. It is the science field dealing with prevention of scales, gas lock and other problems in the lifting system that could stop flow of fluid from the subsurface. Integrated artificial lift optimisation with real-time monitoring and control or periodic engineering interventions identify problems in the reservoir or wellbore construction and help improve production with targeted remedial actions. On average, the optimisation process improves oil production by 20% and more than half of all artificially lifted wells have potential for significantly improved operation and increased production; gains of more than tenfold have been verified by production measurements.

Session 4: Artificial Lift Selection Criteria for Optimum Efficiency

Artificial lift selection requires a very careful consideration of current and future wellbore and reservoir conditions. There are many rules of thumb and many grey areas. There is no technique that will give a quick and easy answer. Due to the many possible combinations of well parameters, countless factors will affect the artificial lift selection and performance. Some samplings of these well parameters are reservoir characteristics, fluid properties, bottom-hole pressures and temperatures, well productivity index, completion depth, completion type, deviation, location, intervention requirements, solids production, gas production, production chemistry, power availability and market conditions. If a proper design is to be made, all of these parameters and system components must be understood. If one component is changed, it will affect the performance of all the associated components. In many field developments, different lift methods may be optimal at different times in the life of the field. Therefore, well thought out contingency plans are vital to cater to changing well conditions over time.

One-Day Master Class**“Artificial Lifting Economics”****12 October 2009, JW Marriott Hotel, Cairo, Egypt****By Manickavasakan S. Nadar, Petroleum Engineer Consultant, Middle East**

held in conjunction with the

SPE APPLIED TECHNOLOGY WORKSHOP**“Artificial Lift Intelligence for Production Optimisation”****13–14 October 2009, JW Marriott Hotel, Cairo, Egypt****Course Description**

This course is designed to compare the economics of different artificial lift methods. Artificial lift is an important element for boosting or sustaining oil and gas production from many assets all over the world. The selection of proper artificial lift method for a hydrocarbon producing asset is very challenging, considering the various factors that come into play. Economics will play a key role in the method of artificial lift selected for the asset. In this course we will explore ways of optimising the costs of operating the asset with special emphasis on the artificial lift method used.

Course Objectives

By attending this Masterclass you will be able to:

- Become familiar with various types of artificial lift methods and their applications
- Understanding the economic elements of the AL methods
- Become familiar with the factors to be considered for selecting the right AL method
- Comparing the economics of various AL methods
- Become familiar with various contracting strategies
- Identify methods for win-win solutions while dealing with service companies

Course Content

- Evaluation criterias used for the selection of artificial lift methods
- Infrastructure considerations - back up provisions for alternate lift methods
- Different contracting methods between service companies and operators
- Managing contracts with suppliers
- Sustaining efficient operations with oil price fluctuations
- When to switch to alternate artificial lift methods
- Asset based optimisation approach for artificial lifts

Intended Audience

This course is designed for petroleum engineers, reservoir engineers, production technologists, contracts engineers, production operations and engineering managers and financial analysts dealing with hydrocarbon production and artificial lift operations.

Course Duration

The course is designed to be for one day on Monday, 12 October 2009 from 0900–1700 hours

Seminar Instructors:

Manickavasakan S. Nadar is a petroleum engineering consultant specialising in production engineering, artificial lift and asset optimisation and is based in the Middle East. He has worked in various capacities in the upstream industry with major operators and service companies for the past 25 years. Specialising in system design, modelling, operation, optimisation and trouble shooting in gas lift and ESP operations, he has worked in production operations, production engineering, artificial lift engineering in many fields, both onshore and offshore, and has led asset optimisation teams. He is also an expert in asset optimisation and the use of modelling tools for integrated asset optimisation models (IAM).

Nadar has earned his B.S Degree in Chemistry with gold medal from Madurai University, India and B.S. Degree in Chemical Engineering from Institution of Engineers (India).

As a consultant, Nadar is currently assisting major operators in the Middle-East in the artificial lift optimisation and de-bottlenecking of their assets. He has been a trainer and mentor throughout his career and has several SPE papers and other publications to his credit.

Course content has been jointly compiled and contributed by James Lea and Manickavasakan S. Nadar

James Lea is currently involved in teaching industry courses on subjects such as artificial lift, ESP, Gas lift, Beam lift and Nodal Analysis for OGCI/Petroskills as well as consulting on production and artificial lift related projects. He has been recently more involved with gas well dewatering and is co-author of Gas Well Deliquification by Lea, Nickens and Wells published by Elsevier as well as publishing several articles on related subjects. He organised the first Gas Well Deliquification Workshop four years ago and this year it had grown to over 700 in attendance with continued direction from ALRDC. He also was one of the founding members of the ESP Workshop, a current semi-annual event in Houston. He has received the SPE 1996 Production Award, the 1990 Slonneger Awards, and was a distinguished lecturer for the SPE twice. He has 100 publications related primarily to artificial lift and production. He graduated from University of Ark with the BSME and MSME in 1965–67 and the PhD from SMU in 1970 working in the area of heat/fluid flow

DEADLINE FOR RECEIPT OF REGISTRATION FORM: 12 SEPTEMBER 2009

Artificial Lift Intelligence for Production Optimisation

Registration Form

First Name: _____ Last Name: _____

Job Title: _____

Company: _____

Address: _____

Town/City: _____ Postcode: _____ Country: _____

Email: _____

Tel: _____ Fax: _____

SPE Member: Yes No If Yes, SPE Membership Number: _____

Details of relevant experience: _____

Do you wish to present a poster? (subject to selection) Yes No

Do you wish to be considered a presenter? (subject to selection) Yes No

If yes, please indicate which subject you would like to present on: _____

1 Day Materclass:

International (Egyptian Nationals and Non-Egyptian Nationals based outside Egypt)

USD 450 for SPE Members USD 550 for Non-Members

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USD 1,450 for SPE Members USD 1,550 for Non-Members

Payment by Credit Card: Credit Card (Check one) American Express MasterCard Visa

 Card Number (will be billed through Society of Petroleum Engineers)

 Expiry Date (mm/yy)

Name of Credit Card Holder (printed): _____

Billing Address including Zip Code/Postal Code of Card: _____

Signature (required): _____ Date: _____

Payment by Bank Transfer: IMPORTANT - For Reference: Please Quote "09ACAI" and Name of Delegate
 Make Payment to: HSBC Bank Middle East, Jebel Ali Branch, PO Box 66, Dubai, UAE
 Account Name: SPE Middle East FZ-LLC Account Number: 035-129709-100 Swift Code: BBMEAEAD

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To submit your registration online, please visit the
 SPE Web Site at: www.spe.org/events/09acai
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