

The region's only dedicated forum on:



ARTIFICIAL LIFT 2006

Boost Efficiency, Improve Economics and Extend Well Run Life

2-DAY FORUM
21 - 22 FEBRUARY 2006

PRE-CONFERENCE ADVANCED MASTERCLASS
20 FEBRUARY 2006

POST-CONFERENCE WORKSHOP
23 FEBRUARY 2006

THE SHANGRI-LA HOTEL, JAKARTA, INDONESIA

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delegates before
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save 25%

Ensure you have the best possible design, selection, and installation to maximise run life and optimise production by discovering how:

- **BP INDONESIA** reduced field decline by 18% through application of a new technology in its West Java field
- **SHELL E&P EUROPE** manages tail-end production to realise future potential of its mature gas fields
- **SAUDI ARAMCO** achieves incremental production through ESP application in its fields
- **CONOCOPHILLIPS** optimises production from gas wells by integrating production modelling
- **CNOOC SES** prolongs run life with an oversized and mixed flow type ESP application
- **PETROLEUM DEVELOPMENT OMAN** advances the performance of its artificial lift projects with effective and practical steps
- **BP KUWAIT** protects its base production by applying various artificial lift technologies in its North Kuwait fields

Benefit from the worldwide expertise of:

PETROLEUM DEVELOPMENT
OMAN

BP KUWAIT

SHELL E&P EUROPE

CONOCOPHILLIPS

SAUDI ARAMCO

GULF OF SUEZ PETROLEUM
COMPANY (GUPCO)

CNOOC SES

TOTAL E&P INDONESIE

BP INDONESIA

WEATHERFORD

DON'T MISS OUR HIGHLY INTERACTIVE WORKSHOP AND MASTERCLASS ADDRESSING THE INDUSTRY'S MOST CRITICAL ISSUES:

Masterclass:

Best Practices In Sucker-Rod Pumping System Design And Optimisation
MISKOLC UNIVERSITY

Workshop:

ESP Training and Competency Development To Help Boost Your Capabilities
PETROLEUM DEVELOPMENT OMAN

This is a rare opportunity to hear about operators' experiences with specific equipment & systems and benefit from their learnings. Good opportunity to meet other people working in this area.

EXXONMOBIL

Organiser:



Official Media Partners:



07.30 Coffee and Registration

08.00 Chairman's Welcome

08.15 **ESSENTIAL RISK ASSESSMENT PROGRAMS TO ACHIEVE SUCCESSFUL AND SAFE ARTIFICIAL LIFT OPERATIONS**

The integrity of artificial lift handling facilities has received significant attention over the last few years. Aging wells and infrastructure, coupled with essential maintenance programs have put more strain on artificial lift handling facilities to remain in good condition for service. In his presentation, Dr. Kandil will focus on:

- Realising the benefits of risk assessment techniques
- Identifying the key role of data management in risk assessment
- Extending the life cycle of an artificial lift asset by developing a cost effective risk based inspection plan
- Using risk assessment data as a gauge for problem spots
- Utilising risk assessment to improve the safe operational status of mature artificial lift handling facilities
- Incorporating risk assessment into the integrity management program of the artificial lift handling facilities, to reduce incidents and other unexpected failures
- Establishing a risk-based prioritisation for the artificial lift handling facilities

Dr. Essam Kandil

*Team Leader Infrastructure, Integrity Management Team
GULF OF SUEZ PETROLEUM COMPANY (GUPCO)*

09.00 **IMPROVING THE PERFORMANCE OF YOUR ARTIFICIAL LIFT PROJECTS**

- The use of downhole data monitoring to provide information on areas for improvement
- Data analysis tools you can use to ease this process
- Troubleshooting tips to reduce failure rates
- Failure reduction as the first step to run life extension

Nasser Ahmed Al-Rawahy

*Head of Artificial Lift Business Improvement Team
PETROLEUM DEVELOPMENT OMAN*

09.45 Coffee and Networking

10.15 **USING INTEGRATED PRODUCTION MODELLING TO CHOOSE ARTIFICIAL LIFT METHODS AND OPTIMISE PRODUCTION FROM GAS WELLS**

Choosing the best artificial lift method to deplete gas wells requires multi-discipline, full life cycle evaluations from the reservoir through to the facilities. Easy-to-use integrated production modelling tools and methods are available to facilitate communication between disciplines, provide flow streams for economics and ensure quick evaluation of multiple optimisation/artificial lift options. In this presentation, case histories and examples will be shown to demonstrate how integrated production modelling can be applied to achieve better results than "classical" methods to solve routine well optimisation/artificial lift problems.

Larry Harms

*Production Optimisation Engineer
CONOCOPHILLIPS*

11.00 **TOTAL E&P INDONESIA'S EXPERIENCE IN MANAGING GAS LIFT ACTIVITIES**

Gas lift engineering duties consist of hundreds of wells in countless zones. This makes it necessary to have a systematic design method in place in order to prevent time wasted in mandrel design being prepared uniquely for each well. In this presentation, Wangsa will stress the need to have a gas lift standard design and share with you TOTAL's experience in managing gas lift activities.

Wangsa Sudrajat

*Well Performance Team Engineer
TOTAL E&P INDONESIA*

11.45 Networking Lunch

13.00 **MANAGING TAIL-END PRODUCTION IN SHELL'S EUROPEAN GAS FIELDS**

Together with exploiting its green field prospects, Shell E&P Europe operates numerous gas fields in a largely brown field environment. Following an extensive review of available artificial lift technologies in relation to existing well constraints and economic field development potential, the decision was taken to adopt the injection of surfactants as the prime tail-end production management strategy. After an introduction of the physico-chemical fundamentals of surfactant-assisted artificial lift, Rob will focus on the application development of this technology in Shell's European gas fields. He will explain the technological challenges that differentiate applications in Europe from similar applications in the United States and illustrates its future potential when applied to mature gas fields.

Rob Eylander

*Senior Production Chemist
SHELL E&P EUROPE*

13.45 **IMPROVING THE PROFITABILITY OF SUCKER-ROD PUMPED WELLS IN A MATURE FIELD**

The profitability of rod pumping operations is a direct function of the energy requirements of pumping. For maximum profits the efficiency of the pumping system must be optimised. This can only be achieved by finding the optimum pumping mode for the required liquid production rate. Dr. Takacs will present a case study on improving rod pumping operations, which were conducted in a mature onshore field with 70-plus rod-pumped wells.

Dr. Gabor Takacs

*Head of the Petroleum Engineering Department
MISKOLC UNIVERSITY, HUNGARY*

14.30 Coffee and Networking

15.00 **GAS LIFT APPLICATION & CHALLENGES TO REDUCE FIELD DECLINE IN WEST JAVA FIELD**

Gas lift was selected as a main artificial lift method in the West Java field when the reservoir pressure was declining due to the absence of reservoir pressure maintenance. Comprehensive surveillance in gas lift activities are needed to maintain the oil production in this field as currently more than 85% of wells are producing under gas lift. In 2005, well work activities successfully reduced field decline by 18%. A gas lift surveillance system is applied to maintain gas lift as a major well work contributor in West Java field. David will discuss the activities of each part gas lift surveillance system, current gas lift challenges and application of a new technology to reduce field decline and increase the recoverable reserves in West Java field.

David Tobing

*Petroleum Engineer
BP INDONESIA*

15.45 **INTERACTIVE ROUNDTABLE SESSION**

This session will allow you to select a topic and tap into a pool of expertise in focused roundtable groups. These discussions are your opportunity to reflect on what you have learnt thus far, discuss issues and establish new ideas and strategies to take back to your office. You will be able to select one of the following discussion groups and apply the experience of others to advance your own projects and overcome individual problems:

- Unlocking the hidden benefits of quality artificial lift planning, design and trouble-shooting
- How you can extend the run life – and the efficiency – of your artificial lift systems?
- Proven tools you use to optimise your existing selection processes

FACILITATED BY WEATHERFORD

16.30 End of Conference Day One

- 07.40 Coffee and Registration
- 07.55 Chairman's Welcome and Recap
- 08.00 **APPLICATION OF ARTIFICIAL LIFT TECHNOLOGIES IN NORTH KUWAIT OIL FIELDS TO PROTECT BASE PRODUCTION**
North Kuwait's oil fields have been on natural flow for a long time. Reservoirs have become matured and pressures have declined. Water-flooding has been used to arrest the reservoir pressure from further decline. ESP systems have been used in some fields while gas lift was pilot-tested in two other fields. At this time, gas lift was implemented in the main Raudhatain and Sabriyah fields. An ESP pilot project has been initiated in these fields as well. Other artificial lift technologies being evaluated include rod pumping systems, and progressive cavity pumps. In this presentation, Tony will focus on BP's applications of different artificial lift technologies in North Kuwait to help protect its base production.
Tony Liao
Senior Petroleum Engineer
BP KUWAIT
- 08.45 **ARTIFICIAL LIFT SELECTION AND ESP APPLICATION AND EXPERIENCES IN SAUDI ARAMCO FIELDS**
Saudi Arabia presents some unique problems with regard to artificial lift selection. Due to the combination of reservoir types, class of produced fluids and required offtake rates, most artificial lift forms are precluded from consideration. The overwhelming trend for plateau maintenance and incremental production is the use of Electric Submersible pumps. In this presentation, Saudi Aramco's selection and implementation practices will be explained, as well as problems and solutions that have been discovered.
Robert Cox
PE Specialist
SAUDI ARAMCO
- 09.30 Coffee and Networking
- 10.00 **OVERSIZED AND MIXED FLOW TYPE ESP APPLICATION TO PROLONG THE RUN LIFE IN LOW VOLUME WELL WITH SCALE AND SOLID PROBLEM**
Production from CNOOC's fields began in the early 70's. Since then the reservoirs have depleted considerably and ESP failure rate has increased especially on the low volume wells. ESP teardowns were performed in order to determine the cause of failure and considerable amounts of scale and/or solid were found deposited in the pump stages. A new solution has been tried to prolong the ESP run life in low volume wells with scale and solid problems by installing the pump with a mixed flow type impeller which has a larger vane opening compared to the radial flow type impeller in the pump stages. These will give more space for the solid to pass through the pump stages and create more time for the scale build-up to take the vane space on the impeller. In this presentation, Andi will focus on the utilizations of the mixed flow type impeller pump stage to help you increase ESP run life.
Andi Wibowo
Production Engineer
CNOOC SES
- 10.45 **INTEGRATED APPROACH TO IMPROVE ESP RUN LIFE**
Saudi Aramco has been able to improve ESP run life in the Central Arabia Fields through an integrated approach that incorporates technological applications, innovative solutions and investment on human resources. This presentation will discuss Saudi Aramco's experience in implementing new technology applications in ESP wells in the area of well completion and ESP design. AbdulWafi will shed light on the innovative solutions implemented to enhance power system reliability and surface control equipment performance. He will also address Saudi Aramco's human resource efforts and initiatives to enhance ESP run life.
AbdulWafi A. Al Gamber
General Supervisor, ABQQ Production Engineering Division
SAUDI ARAMCO
- 11.30 Networking Lunch
- 13.00 **ADVANTAGES OF USING A VARIABLE FREQUENCY GENERATOR AS THE POWER SUPPLY FOR AN ESP**
Canadian Nexen Petroleum Yemen has installed a 660kW Variable Frequency Generator (VFG) run life resulting in a reduction in motor amperage and a 3% increase in production. This presentation will take a detailed look at the Nexen case study, showing how you can apply the same methods to achieve similar improvements in your own ESP systems.
Sid Degen
VP North American Operations
CANADIAN ADVANCED INC.
Co-author:
Dana Pettigrew
Yemen Operations
NEXEN PETROLEUM INTERNATIONAL LTD.
- 13.45 **ARTIFICIAL LIFT IN MATURE FIELDS: CASE STUDY OF THE GOLFO SAN JORGE BASIN**
 - The criticality of artificial lift in protecting base production and core revenue to feed new projects
 - Using artificial lift to maintain competitive lifting cost per barrel compared with other projects
 - Inexpensive options you can apply to a mature basin countering scale to maximise artificial lift performance in ageing fields**Marcelo Hirschfeldt**
Consultant
OILPRODUCTION CONSULTING & TRAINING*
- 14.30 Coffee and Networking
- 15.00 **ARTIFICIAL NEURAL NETWORK ALGORITHM FOR ELECTRICAL SUBMERSIBLE PUMP (ESP) DESIGN**
Artificial Neural Network is a computational structure by the study of biological neural processing. Neural network applications are used today to solve the problem of design, optimisation and selection of Electrical Submersible Pumps (ESP). Before the Artificial Neural Network model is used to provide the desired output, the model must be trained to recognise the relationship between input parameters. The result of the research would be used for pump selection. This technique can determine the overall efficiency of the system and point out any changing well conditions.
Dr. Sudjati Rachmat
Lecturer, Petroleum Engineering Department
BANDUNG INSTITUTE OF TECHNOLOGY (ITB)
Dr. Anas Puji Santoso
Lecturer
UNIVERSITY OF VETERAN YOGYAKARTA
- 15.45 **INTERACTIVE ROUNDTABLE SESSION**
This is your last opportunity to learn from the industry's pool of expertise in small roundtable groups. These discussions allow you to reflect on what you have learnt as the conference progressed, to discuss issues and establish new ideas and strategies to take back to your office. Select from one of the following discussion groups so you can apply the experiences of others to advance your own projects and overcome individual problems:
 - How can you implement an inexpensive, yet effective, gas lift optimisation programme?
 - Real-time computer aided artificial lift optimisation options available to you
 - Justifying the business case for ESP investment
 - What new technology is available for artificial lift?**Facilitated by the Chair**
- 16.30 Chairman's Summary and Close of Conference

* Speaker to be confirmed
Please visit www.iqpc.com.sg/AS-3242 for updates

MASTERCLASS
08.00 - 14.00

BEST PRACTICES IN SUCKER-ROD PUMPING SYSTEM DESIGN AND OPTIMISATION

The aim of artificial lift design is to ensure the most economical means of liquid production within the constraints imposed by the given well and reservoir. For sucker-rod pumping, this usually means selecting the right size of pumping unit and gear reducer, as well as determining the pumping mode to be used.

The background for system optimisation is laid by a detailed discussion of the ways to calculate pumping parameters. The API RP 11L procedure is fully described and its use is illustrated together with the latest development in rod pumping analysis. The solution of the damped wave equation and the various pitfalls of its application are also discussed.

By attending this masterclass, you will:

- Have a working knowledge of API RP 11L calculations and be aware of its limitations and possible improvements
- Understand the basics of using the solution of damped wave equation
- Be able to properly counterbalance a pumping unit and realise the impact on optimum performance of the pumping system
- Understand the grave importance of selecting the optimum pumping mode for establishing an energy-efficient pumping system
- Recognise the operational cost savings made possible by using the pumping mode with the maximum lifting efficiency

About your masterclass leader:

Dr. Gabor Takacs

**Head of the Petroleum Engineering Department
MISKOLC UNIVERSITY, HUNGARY**

Dr. Takacs has more than 30 years of teaching and consulting experience in the production engineering field. He is the author of several books on artificial lift technology which includes "Sucker-Rod Pumping Manual" and "Gas Lift Manual". He has taught various short courses for many oil companies in Libya, Mexico, Argentina, and Austria; and is a well-known consultant and instructor on production engineering and artificial lift topics.



POST-CONFERENCE WORKSHOP THURSDAY 23 FEBRUARY 2006 • 08.00 – 11.00

WORKSHOP
08.00 - 11.00

ESP TRAINING AND COMPETENCY DEVELOPMENT TO HELP BOOST YOUR CAPABILITIES

Petroleum Development of Oman (PDO) produces 40% of nett oil per day by means of Electrical Submersible Pumps (ESPs) and now operates almost 900 of these pumps. It was recognised that training and development of staff was a key component in the successful implementation of ESP technology and PDO is in the process of building and implementing long term training plans. These are customised, sustainable and linked to a competency development and job progression system, covering all artificial lift technologies. Three case histories will be presented, highlighting how the coaching programme resulted in a tangible benefit to PDO in terms of production and run life improvement.

This workshop will highlight:

- The importance of proper training to optimise ESP performance and reduce risk throughout an ESP lifecycle
- How you can customise an ESP course with the assistance of equipment manufacturers
- Supplementing conventional classroom training with practical implementation coaching
- The benefits that PDO have achieved using such an approach and how you can replicate them

You will return to your department with the skills to:

- Improve the run life, the efficiency and the economics of ESP deployment
- Enhance the skill sets of engineers and field personnel with respect to ESPs
- Guarantee sustainability by developing in-house ESP experts
- Establish a competency based system and monitor the development of employees dealing with ESPs

About your workshop leader:

Nasser A. Al-Rawahy

**Head of Artificial Lift Business Improvement Team
PETROLEUM DEVELOPMENT OMAN**

Nasser has extensive experience in a number of artificial lift techniques, but particularly with the design, selection and application of Electric Submersible Pumps (ESPs) and competency development for professions engaged in ESP activity. PDO currently runs over 900 ESPs and is considered one of a small handful of true industry leaders in the field.

With production priorities shifting to mature fields, you need a sound strategy to overcome the artificial lift challenges you face. This is the only case-study driven forum that will deliver key insights enabling you to put proven solutions in play.

Here's 3 top reasons why this forum is worth taking two days out of the office:

1. GUPCO will reveal how they achieved **superior artificial lift facility integrity** whilst performing **essential maintenance programs**
2. Total E&P Indonesia have put in place a **systematic design method to manage necessary gas lift engineering** across hundreds of wells in countless zones
3. Saudi Aramco will shed light on their **artificial lift selection criteria** and the **innovative solutions** they implemented to **enhance ESP run life**

Still not convinced?

This forum will deliver:

Bottom-line benefits – this event will deliver the tools you need to optimise the performance of your entire spectrum of artificial lift activity. If these improvements allow you to extend the run life of just one of your pumps by 6 months, is this not time well spent?

An unrivalled, unbiased agenda – designed by the industry, for the industry to share proven, business critical insights into the tips, tools and strategies you can apply in your own projects to enable you to maximise the performance from your artificial lift investments.

Unprecedented interactivity – tap into the minds of global experts at our specially requested and designed roundtable sessions which will allow you to brainstorm the best-practice industry solutions to the challenges you face.

SPONSORSHIP EXHIBITION & OPPORTUNITIES

Key decision-makers are attending this conference to evaluate the best strategies and tools for their company's artificial lift programs. Decisions will be made; Partners will be chosen; People will be influenced by the discussions that take place. Does your organisation need to be in the room when this is happening?

For more information call Miles Harley at **+65 6722 9416** or email miles.harley@iqpc.com.sg

Official Media Partners:



The Artificial Lift Research And Development Council (ALRDC) is a non-profit 501(c)6 organization intended to facilitate:

- Cooperative efforts in artificial lift research and development.

• Improved acceptance and use of artificial lift technologies through improved dissemination, implementation, training, and sharing of best practices.

ALRDC Members. Membership in ALRDC is open and free of charge to:

- All oil-field operating company personnel – both majors and independents – that use artificial lift in their business.

- All service and consulting company personnel that offer artificial lift products and/or services.

- All university personnel that offer an artificial lift program.

ALRDC operates a public web site at www.alrdc.com.



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