



Time to effect change on a global scale



Gladys Gonzales
EAGE president
2013-2014

During my term of office I look forward to channeling my energies into the leadership of EAGE, and have chosen as the theme 'Making a difference on a global scale – narrowing the gap'. This refers to the need to narrow the gap between geoscience and engineering disciplines; professional development across the regions; academic and industry efforts to develop emerging technologies to address society's needs; for young professionals and women in career development; professional degrees and professional occupation; and active and inactive members.

Most EAGE members received part of their education in their native countries, while others studied and worked in foreign nations during their careers. Our members are professionals with a global presence. I believe tapping into the



EAGE president Gladys Gonzales at EAGE Annual Meeting in London.

strengths of the different regions will help to narrow the gap. I also would like to continue to work with sister and local societies and explore where our Association can make a difference in narrowing gaps.

To that end, planned initiatives include multi-disciplinary conferences, workshops and programmes in partnership with other geoscience and engineering societies. There will also be analysis of how members participate in EAGE committees, events and ballots. In the Middle East, we return to our cooperation with UAEU for the Second International Conference on Engineering Geophysics in Al Ain on 23–27 November 2013; we will organize for the fourth time a Middle East Tight Reservoirs workshop with AAPG in Abu Dhabi on 28–30 October 2013; GEO 2014 is again looking to be a regional favourite; and there is much more, the details of which can be found in this newsletter.

Furthermore, I will be visiting the Middle East this year going to some amazing countries in the region including the UAE, Saudi Arabia, Qatar and Bahrain, all locations with exciting events and developments within the geoscience and engineering community.

Not only Middle East, but all the regions have outstanding professionals that deserve worldwide recognition for their achievements. Therefore, I would like EAGE members to recognize these outstanding members for their contribution to geoscience and related engineering by sending nominations to the EAGE Awards Committee.

Today, of the 10 EAGE Board members, three are women in key officer positions (an increase from only one in the period 2006–2011). I think we are moving in the right direction. But there is plenty of room for improvement!

We need to start looking at the number of women getting the relevant degrees, and for

Basin and petroleum system modelling will be focus of Dubai workshop

EAGE is organizing a first workshop on the topic of 'Advances of Basin and Petroleum Systems Modelling in Risk and Resource Assessment' in Dubai from 19–22 October 2014. The aim of this workshop is to provide a forum for exchange of ideas and encourage cooperation among specialists from industry, academia, research institutes and developers to advance basin and petroleum systems modelling.

“ Key industry and academic experts are invited to share their ideas. ”

For anyone currently involved in exploring in a basin for conventional or unconventional resources, or developing a reservoir that is

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Address from the president.

those that do not end up working in the industry or academia, we need to find out why? For example, the majority of papers are still presented by men and the question is why women do not participate more?

We have talented professional women in all regions, but I do not believe in imposing quotas for the equal representation of women on the board or committees. This was also the unanimous conclusion from 65 participants of our first women in geoscience event that took place during our 75th Annual Meeting in London. Female representation should be a natural process.

I will promote the participation of women in EAGE by asking our members, both male and

“ I would like to explore where our Association can make a difference in narrowing gaps. ”

female, to recognize their female colleagues for their qualities and achievements. I will ask members to invite qualified women to participate on existing and new committees, to provide short courses, to present papers and to nominate them for awards and officer positions.

Basin and petroleum system modelling will be focus of Dubai workshop

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strongly affected by processes at the basin scale, then this workshop should be of great interest.

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Petroleum systems models deal with the integration of hydrocarbon-related geological processes in sedimentary basins over geological time scales. They cover deposition, compaction, heat flow analysis, temperature and pore pressure calculation, hydrocarbon generation, adsorption and expulsion processes, as well as migration and fluid property prediction and analysis.

The workshop will provide an opportunity to discuss the current status of petroleum systems modelling and remaining challenges that we want to address with new ideas in R&D that will improve our understanding of the distribution of hydrocarbons in the subsurface. It will highlight the geological and technical challenges in modelling of both conventional and unconventional petroleum systems.

Key industry and academic experts are invited to share their advances in basin and petroleum system modelling. Professionals from international and national operating companies are

encouraged to present their experiences including case studies. Leading service companies and research institutions are also invited to discuss advances and remaining challenges.

The Call for Papers is now open via the workshop website, topics for submission include: petroleum systems modelling role in exploration risk assessment; the role of basin and petroleum systems modelling in reservoir description and field development; the use of petroleum systems modelling in unconventional resource and reservoir assessment, and advances and R&D in basin and petroleum systems modeling.

Join us in Dubai to see how the current knowledge of basin and petroleum systems modelling helps your company's exploration and reservoir development efforts. You are not only a passenger or a witness to this marvellous journey but you are also a driver to new learnings and technological advances!

For further details on this event please go to www.eage.org/events/basin-modeling-2014.



Dubai skyline.

Borehole geology workshop to debut in Dubai

EAGE Middle East is organizing a workshop on the topic of Borehole Geology for the first time, to be held in Dubai on 12–15 October 2014.

The last 20 years have seen borehole images becoming a key measurement for sub-surface description and borehole-image-based-geology discipline maturing to be today a fundamental of reservoir model building. The two last decades have also seen a fast path of developments in acquisitions technology and in drilling practices with a large increase of highly deviated and horizontal wells drilled each year around the world.

Those evolutions and their mutual interactions have been reflected in the number and versatility of papers and books published in the industry on structural and sedimentological interpretation, geomechanics or geosteering applications, conveyance on wireline, drillpipe and logging while

drilling (LWD) from detritic or carbonates to unconventional environment. A tremendous number of applications and case studies have been published and presented in technical societies.

The strength of this workshop is to be organized around borehole images. The aim is to promote knowledge sharing, and discussions on the qualities and limits of current techniques and technologies; and also to review and share latest state of the art development in technology and practice from exploration to production.

The workshop will include a combination of keynote/invited speakers and an open call for papers. We will have dedicated time for theme discussions in order to share views on acquisition practice, interpretation and lessons learnt, and for networking.

The event is appropriate for senior geoscientists and discipline experts in borehole geol-



Dubai venue for borehole workshop.

ogy, geomodels, geosteering and geomechanics dealing with borehole images, along with PhD and post-doctorate students. It should appeal to multi-disciplinary teams' geologist and technical experts in operating companies, service companies, and academic institutions. To foster open discussions and sharing of experiences and knowledge, the number of participants will be limited to 80–100 and priority will be given to participants who submit papers. For further information go to www.eage.org.

Major geoscience societies lend support to Education Days in Al-Khobar



EAGE Professional Education Days participants in 2012.

Dahran Geoscience Society (DGS) together with the supporting societies, EAGE, AAPG and SEG, is to introduce a multiple short course programme for geoscience professionals entitled 'DGS/EAGE/AAPG/SEG Unconventional Education Days 2013'. It is due to be held on 4–13 November 2013 in Al-Khobar, Saudi Arabia.

This major educational programme should be an ideal platform to increase knowledge and awareness of new methods and technology. The

short courses not only reflect the latest scientific developments in geosciences but also demonstrate applications of these theories to real-life problems.

DGS president Dr Aiman Bakhorji said: 'I strongly encourage you to participate in one or more short courses during the Education Days in Saudi Arabia. I am sure that you will be positively surprised by the high quality and professionalism of the courses and that they will meet your personal and organization's needs.'

The Education Days programme consists of multiple short courses delivered by distinguished geoscientists and professionals. The courses are selected to ensure consistent content with appeal to a broad geoscience and engineering audience. Each day a course on a different topic is scheduled, so that all attendees can participate in one or more courses based on their personal needs and interests.

This year the EAGE contribution to the event will be a two-day course, 'Shale Gas Geomechanics: the key to successful production from shale' presented by Hamed Soroush set to run from 10–11 November 2013. The course aims to discuss the geomechanical aspects of unconventional resources and how it adds value to the development of these reservoirs.

The Carlton Al-Moaibed Hotel, Al-Khobar, Saudi Arabia will once again host the event; conveniently located for all professionals from GCC countries. More details on all the courses and venue information can be found at www.learninggeoscience.com and the DGS website www.dgsonline.org.

Amsterdam '14: Experience the Energy!

If you want to 'Experience the Energy' there is no better way than coming to Amsterdam in June next year for our Annual Meeting. Adopting this theme for EAGE's 76th Conference & Exhibition is an invitation to meet fellow professionals, catch up with old friends, share experiences, and at the same time appreciate and learn from the breadth and depth of geoscience and engineering activities around the world. And what location could be more convivial than Amsterdam, one of our most popular venues.

The main business of the meeting is of course how the multi-disciplinary approach to oil and gas exploration and production fostered by EAGE can contribute to meeting the energy demands of the future. The role of fossil fuels and increasingly low emission carbon fuels are set to continue for decades in the global energy system simply by virtue of the investment needed for any alternatives to scale up to meet the demand. 'Experience' will play an essential role in providing the solutions. A major priority is to build on the experience of our current workforce and sharing this experience with new generations of professionals who need to be brought up to speed as rapidly as possible. It is already very clear that manpower shortage could be a major issue in the years to come, which is why we put such an emphasis on the Student Programme and associated activities to encourage new recruits into the industry.

Special programme for students

After the success and record number of student delegates during London '13, it is only logical that the expectations are high for the Amsterdam '14 Student Programme. With 'Experience the Energy' as an overall theme for the conference, the student programme promises some interesting activities and challenges in order to complement this theme. For sure it will be a balanced programme with lots of opportunities to learn, network and have fun! The Student Programme will include the Geo-Quiz, a workshop, a field trip to Bad Bentheim (Germany), short courses, the Recruitment Café, trial interviews, poster presentations, the student evening and much more. Call for Papers is now open, so this is your opportunity to be included in the Amsterdam '14 programme! Travel grants are available on www.eage.org.



Exploring subsalt imaging in Limassol!

Subsalt Imaging plays a crucial role in exploration and development of large hydrocarbon deposits around the world. With the ongoing success of subsalt exploration in the Arabian Gulf, Red Sea and the Mediterranean Sea, EAGE and the Society of Petroleum Engineers (SPE) have joined forces to present a Subsalt Imaging Workshop. The workshop will be held in Limassol, Cyprus from 16–19 February 2014.

The theme of 'Challenges of Subsalt Exploration and Imaging in the Middle East and North Africa Deep Water' aims to highlight the integrated approaches companies are utilising for a more successful exploration of commercial hydrocarbons.

Three major sessions are being planned for the workshop namely: (1) Geology and Exploration, (2) Geophysics and (3) Drilling Technologies, Formation Evaluation and Case Studies for Sub-Salt Deep Water. Case studies will also

be presented for Geology and Exploration as well as for Geophysics.

The workshop will also feature keynote presentations from Henry Pettingill, director of business innovation at Noble Energy and Mike Zinger from Saudi Aramco. Mike is currently the manager of the Red Sea Exploration Department, tasked with evaluating the potential of the frontier Red Sea province, and to find energy for the western coast of Saudi Arabia.

This integrated workshop will gather key specialists from oil companies, seismic companies, service companies, and academia to discuss the advances that have been made in different disciplines in sub-salt exploration and imaging, with a special focus on North Africa and the Middle East.

Registration is currently open. For more information on the workshop and to register, please visit the event website on www.eage.org.

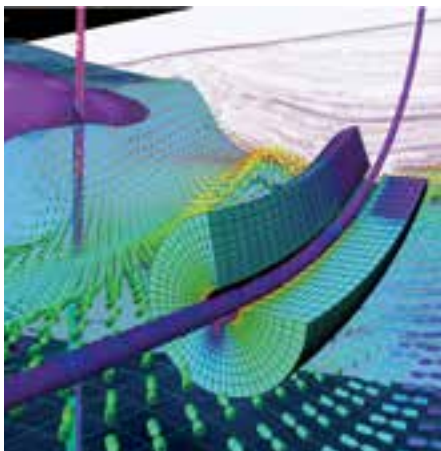
Importance of geomechanics recognized by 2014 workshop

Geomechanics plays an important role in the understanding of wellbore instability, reservoir performance, and most recently in the development of unconventional plays. The topic is due to be discussed at a 2014 workshop in Dubai.

Wellbore instabilities can contribute significantly to increased drilling costs, uncertainty, and risk during the life of a field. In particular, with new legislation requiring the understanding of mud windows as well as kick tolerance whilst drilling and also for the planning of relief wells, it is time to develop more accurate and elegant solutions to predict more accurately pore pressure and fracture gradients.

The performance of reservoirs in general is dependent on a number of factors including (but not limited to) a reliable understanding of the natural fracture networks, depletion rates, well placements, completions and cap-rock integrity. To understand and exploit these reservoirs more efficiently and with minimum risk, we need to improve our ability to describe changes in situ stress with pore pressure changes and integrate the data. The increasing use of EOR techniques (for example steam injection) also means that we need to develop accurate geological models that allow us to understand the effect on overburden (e.g., its integrity, mechanical behaviour) and relationship with the present day tectonic stresses.

The understanding of the present day stress regime and to generate reliable stress profiles for unconventional plays is fundamental for optimal design of hydraulic fracture geometries. Subsequently how these interact with pre-existing



Modern drilling model.

natural fracture networks and faults is critical for the optimal recovery of hydrocarbons with minimal impact on the environment.

All of these topics require the understanding and deployment of geomechanical technologies in a manner that seamlessly integrate with other disciplines such as geophysics, geology, drilling and reservoir engineering. This work-

shop aims to look at how these challenges are currently being overcome and how innovative ideas can help to improve our knowledge and understanding for future success.

The Call for Papers is now open via the workshop website – www.eage.org/events/geomechanics-2014 – with a deadline for submissions of 15 November 2013.

Al Ain all set for second international conference on engineering geophysics

Under the patronage of His Highness Sheikh Tahnoon bin Mohammed Al Nahyan, ruler's representative in the Eastern Province of Abu Dhabi Emirates, the United Arab Emirates University and Al Ain City Municipality in association with EAGE is organizing the Second International Conference on Engineering Geophysics once again to be held in the Emirate of Abu Dhabi - Al Ain City in UAE from 23 – 27 November, 2013.

The success of the First International Conference on Engineering Geophysics was marked by an encouraging number of participants and the interest shown by important higher authorities in the country. This led to the decision to hold the event every two years and to extend the field of interest to other related specialties.

In addition to the main engineering and geotechnical objectives of the coming event, it has been decided to include special sessions on other related applications of engineering geophysics such as archaeology and forensic geophysics.

The opening ceremony on 24 November will be attended by a number of decision-makers, administrators and specialists from the Gulf States and worldwide. Four keynote speakers have been invited to talk on issues related to the importance of engineering/environmental and forensic geosciences.

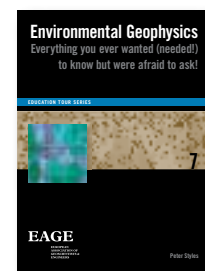
In addition, current EAGE president Dr Gladys Gonzales will be on hand to welcome delegates at the opening ceremony and to mark the continuing cooperation and support of EAGE at this all-important conference.

Complementing the technical presentations, a company display area will be available to interested companies to display/demonstrate their engineering/environmental geophysics technologies (hardware, software, videos, posters, etc.) focusing on different geophysical and geotechnical tools, as well as new processing technologies.

During the conference, EAGE is pleased to be able to bring a one-day short course, to be taught by Prof Dr Peter Styles (Keele University, UK). He will present the EAGE Education Tour (EET) 7 course on 'Environmental Geophysics: Everything you ever wanted (needed!) to know but were afraid to ask!' The course will be taught on Thursday 28 November at the United Arab Emirates (UAE) University. More information on the course and registration details can be found on the website www.learning-geoscience.org.

The conference is supported by ADNOC and Abu Dhabi Police (Diamond Sponsor), Emirates Advanced Investments (Gold sponsor), ADMA (Silver sponsor), and the Abu Dhabi Tourism and Culture Authority as the official tourism and culture partner.

Daily social activities are being planned at the closing of the technical sessions. Online registration is now open.



IPTC in Doha will stage biggest multi-disciplinary event ever in the Middle East



Technical Committee members meet in Doha for the selection of abstracts.

The 7th edition of the International Petroleum Technology Conference (IPTC) is to be held on 19–22 January 2014, at the Qatar National Convention Centre in Doha, Qatar under the key theme of 'Unlocking Energy through Innovation, Technology, and Capability'. The call for technical papers has seen a record increase in the number of papers and participating companies. The event received over 1800 abstracts from oil and gas professionals in 396 companies from 61 countries, an increase of around 60% from the last IPTC which took place in the region.

IPTC is the largest multi-society, multi-disciplinary oil and gas event in the Eastern hemisphere and is co-organized by four leading industry societies – AAPG, EAGE, SEG and SPE. Khalid Al-Hitmi, manager gas development, Qatar Petroleum, host organization of the 7th IPTC, said: 'The 7th IPTC will provide oil and gas professionals with excellent opportunities to connect with the industry's visionary leaders and decision-makers. I would like to thank the committee for their efforts and firm approach in selecting the papers submitted. This in turn ensures the programme is unmatched in quality and sets a high benchmark for papers presented in future events.'

The 7th IPTC selected 500 technical papers during the 29 May selection meeting. The selected papers will be featured in 67 technical sessions and numerous knowledge sharing workshops at

the conference. The technical programme will also highlight high level CEO plenary sessions and four panel sessions. Moreover, the event will showcase a number of business-oriented topical breakfasts and lunches.

Barton Cahir, president Qatar, Exxon Mobil Corporation, co-host organization of the 7th IPTC, said: 'As with previous editions, IPTC promises to be a resounding success. This event will bring the oil and gas community together to discuss the latest issues, technological advancements, and experiences, and foster the exchange and dissemination of knowledge and expertise.'

Over 8000 attendees and 200 exhibitors are expected to participate in the event. The largest multi-society oil and gas exhibition in the Eastern Hemisphere will feature for the first time dedicated discipline-themed zones. Exhibitors will showcase their technologies in the geoscience and reservoir, drilling and completion, projects and facilities, digital energy and automation, gas processing, HSE, and education and training zones. Technical Posters from the same discipline will be placed within the respective zone. Several campaigns will direct delegates and visitors to the zone of their interest and provide for additional opportunities to network.

In addition there will be two short courses presented by EAGE: 'Top Seals and Fault Seals in Clastic and Carbonate Reservoirs: a Practical Approach for Exploration, Production and Reservoir Engineering' by Dr Dirk Nieuwland, and 'Seismic

Reservoir Characterization: An Earth Modelling Perspective (EET 2)' by Dr Philippe Doyen. For more information on these, please visit www.learninggeoscience.org.

An exclusive feature of the IPTC, the Excellence in Project Integration Award, recognizes the best-integrated mega projects in the world in terms of value addition throughout the entire process and value chain, strong teamwork, solid geoscience knowledge, reservoir and production engineering acumen, excellent construction and facilities engineering practices, and adherence to HSE principles. A 10-member Awards Committee consisting of industry's leaders will select the winning project.

The 7th IPTC will also host events and activities for young professionals and students. The IPTC International Young Professionals Competition, under the theme 'World Energy – Gate to the Future', is still in the Call for Papers stage. The International Education Week: 'Energy Challenges + Education = Our Future' aims to attract top undergraduate engineering and geoscience students from around the globe to join the oil and gas industry. The 'Energy 4All' Education Day is an initiative to introduce students to the discipline of petroleum engineering and the industry in general. Other initiatives include a Teachers' Workshop – 'Education Energizing the Future', the Petro Bowl, and the Future Engineers' Parents Dinner.

In a bid to foster further collaboration and growth, the 7th IPTC has received the endorsement of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), Gas Processors Association (GPA), International Association of Drilling Contractors (IADC), International Association of Oil & Gas Producers (OGP), International Safety Quality Environment Management Association (ISQEM), Qatar Geological Society (QGS), Society of Petroleum Geophysicists (SPG India), The Geological Society of London, World Federation of Engineering Organizations (WFEO), and World Safety Organization (WSO).

For information about this event, please visit: www.iptcnet.org/2014/doha.

Saudi Aramco and AOC make their presence felt at EAGE 2013



Ibraheem Assa'adan, executive director of exploration.

Saudi Aramco and its overseas subsidiary Aramco Overseas Co (AOC) were among the most prominent contributors to the

success of the 75th EAGE Conference and Exhibition held in June at London's Excel Centre.

The company was not only visible through its major exhibition presence but was also represented at various technical workshops, panel discussions and lectures throughout the week. Attending from the Kingdom were a host of specialists in geoscience and related engineering disciplines headed by Ibraheem Assa'adan, executive director of exploration.

Assa'adan met with staff and visitors throughout the event, and he also represented Saudi Aramco at one of the executive sessions discussing the world's 'Global Gas Challenge.'

Assa'adan said: 'At Saudi Aramco, we are focused on the long-term and meeting the needs of the country's energy demands, which will double

by 2035 due to population growth. The role of science and technology is critical to the success in creating a more flexible energy supply. In Saudi Arabia, industries such as unconventional gas are only a few years old, which is not long enough to have produced any real science.'

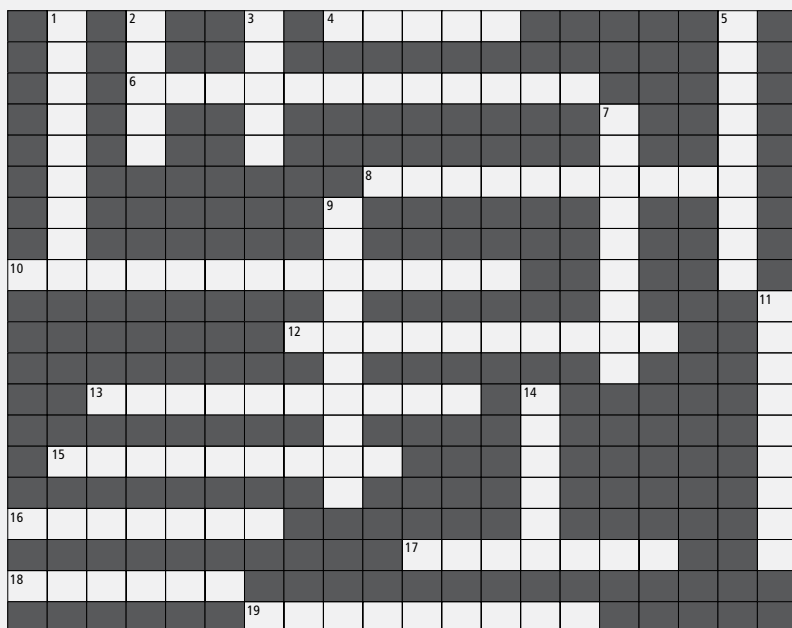
He acknowledged that Saudi Aramco recognizes that it takes time to take the steps needed to evaluate the technical and economic viability of tight gas and shale gas in the Kingdom.

In London AOC took the opportunity to continue with the promotion of its 'Dream Big' recruitment drive targeting European oil and gas professionals interested in working in the Kingdom. Both Saudi Aramco and AOC are keen to maintain the company's knowledge reputation in upstream and have committed to hiring new personnel when the right applicants are available.

Other major sessions of interest to Saudi Aramco focused on the growing demand for energy and how it can be met through exploitation of new areas and new methods of exploration. The role of technology was viewed as critical for the development of exploration, particularly if new locations for drilling, such as the Arctic, were to become feasible. Possible areas of innovation in exploration were identified as subsurface imaging, automated underwater vehicles and satellite sensing.

However, barriers to progress were also identified. In addition to environmental issues, such as water management, concerns were also raised about the social licence to operate and the impact that exploring in new locations could have on the company's reputation. Experts agreed that the public is now better informed and that it was the duty of companies to keep the public updated and educated about new operations.

The EAGE conference's strength has always been its openness, giving stakeholders a chance to discuss issues and challenges facing the energy industry. Nabil Aldabal, managing director at AOC, said: 'It is vital that Saudi Aramco has a presence at events for this very reason. Saudi Aramco and its subsidiaries are major stakeholders whose input and experience at events such as these are mutually beneficial for both attendees and us. It was encouraging to see the number of visitors to our exhibition stand, underlining our status within the industry and the desire of partners and individuals to work with us.'



ACROSS

- 4. Minerals or igneous rocks that are rich in iron and/or magnesium.
- 6. A branch of geology dealing with the classification, nomenclature, correlation, and interpretation of stratified rocks.
- 8. The consolidation of sediments resulting from the weight of overlying deposits.
- 10. Formation from pre-existing rocks or pieces of once-living organisms.
- 12. The frequency, intensity, and distribution of earthquakes in a given area.
- 13. Of, containing, or resembling calcium carbonate.
- 15. A subterranean accumulation of oil or gas held in porous and permeable sedimentary rock.
- 16. An episode of mountain building and/or intense rock deformation.
- 17. Forms in metamorphic rocks at moderate temperature and high pressure.
- 18. A thin, widespread layer of sediment covering an older surface.
- 19. Downslope movement of rock, soil, and mud.

DOWN

- 1. Rainwater from the surface seeps through the ground, absorbing calciumalong the way.
- 2. The name given to molten rock from volcanoes.
- 3. Place where earthquakes starts.
- 5. A point, directly above the true centre of disturbance, from which the shock waves of an earthquake apparently radiate.
- 7. A large body of intrusive igneous rock believed to have crystallized at a considerable depth below the earth's surface; pluton.
- 9. The physical and chemical changes occurring in sediments between the times of deposition and solidification.
- 11. The science that deals with water on and beneath the Earth surface.
- 14. A mound of organic debris or organic-rich soil created by an animal.

See answer p. 10

Update on exploration due at Abu Dhabi event

Get ready for the 3rd EAGE Exploration Workshop which will be held in Abu Dhabi, UAE on 6–9 April 2014. For those thinking of submitting an abstract, the Call for Papers deadline is 1 November 2013.

The 2nd EAGE Exploration Workshop was back in 2010 and to build from this, the next workshop aims to highlight new inroads on how we can 'Move Forward by Exploring Differently' particularly through sharing rel-

evant learnings on best practices in exploration evaluation, lessons learned from failure cases, innovative technology applications and examples of where making use of old data with new processes made a difference.

Key topics will be data acquisition, geology/stratigraphy, new technology, new frontiers and risk assessment in exploration.

For further details and information about submitting an abstract, please refer to www.eage.org.

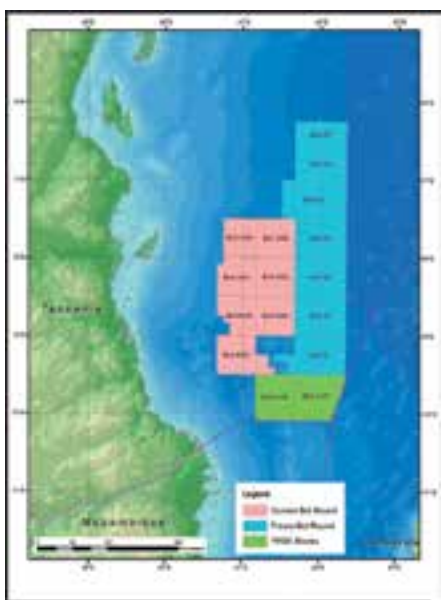
New! EAGE Bookshop in Dubai

The newly launched bookshop based in the EAGE Dubai office offers a wide selection of EAGE publications. Our collection of scientific, academic and specialist publications covers many different fields of study within geology. EAGE members receive attractive discounts on all publications.

To place orders or find out about the various publications that will be available at our events please contact our Middle East office middle_east@eage.org.

Advertorial

Launching the 4th Tanzania Deep Offshore and North Lake Tanganyika Licensing Round

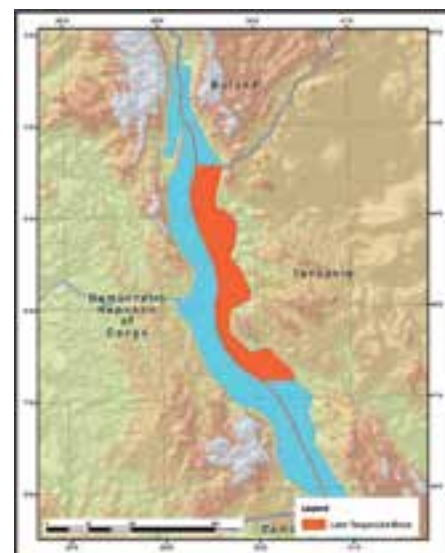
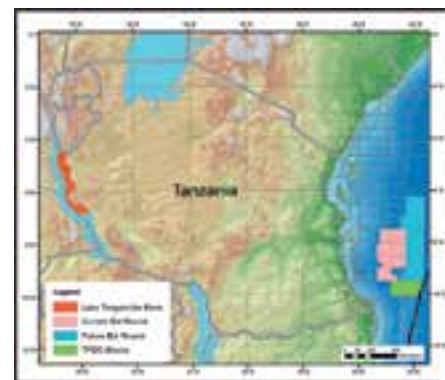


The Government of the United Republic of Tanzania, through the Tanzania Petroleum Development Corporation (TPDC), is pleased to announce the 4th Tanzania Deep Offshore and North Lake Tanganyika Licensing Round. The 4th Tanzania Offshore Licensing Round will be launched on 25 October 2013 during the 2nd Tanzania Oil and Gas Conference and Exhibition being held on 23–25 October 2013. The Conference will take place at

the Mwalimu Nyerere International Conference Centre located in Dar es Salaam, Tanzania. The bid round will be closed on Thursday 15 May 2014.

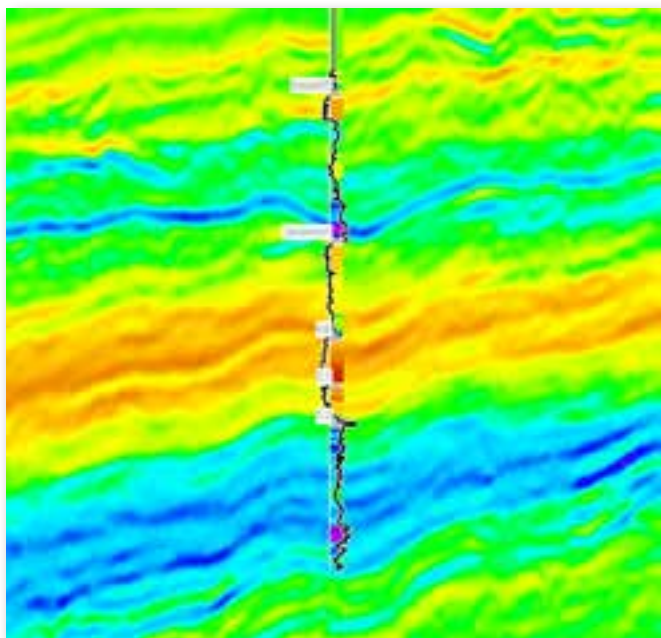
The 4th Tanzania Deep Offshore and North Lake Tanganyika Licensing Round 2013 includes deep offshore sedimentary basins comprising seven deepsea blocks (each averaging of 3000 km²) — Blk4/2A, Blk4/3A, Blk4/3B, Blk4/4A, Blk4/4B, Blk4/5A and Blk4/5B — located in water depths of 2000 m to 3000 m, from 40°30'E to 41°40'E and 7°30'S to 9°00'S. The North Lake Tanganyika block is located offshore in the western arm of the East African Rift System. The two deep offshore blocks, 4/1B and 4/1C, are reserved for Government use where the TPDC will be allowed to execute a different exploration approach with a strategic partner to be competitively sourced and announced at a later date. The deep offshore blocks have good coverage of modern regional 2D seismic data, which can be viewed at ION GeoVentures of Houston, Texas, and WesternGeco of the UK.

Lake Tanganyika, the world's longest (676 km), second largest (32,900 km²) and second deepest (1470 m) freshwater lake, is covered by sparse 2D seismic data collected in the 1980s during the African Lakes Drilling Project. The data and copy of this report is available from the TPDC.

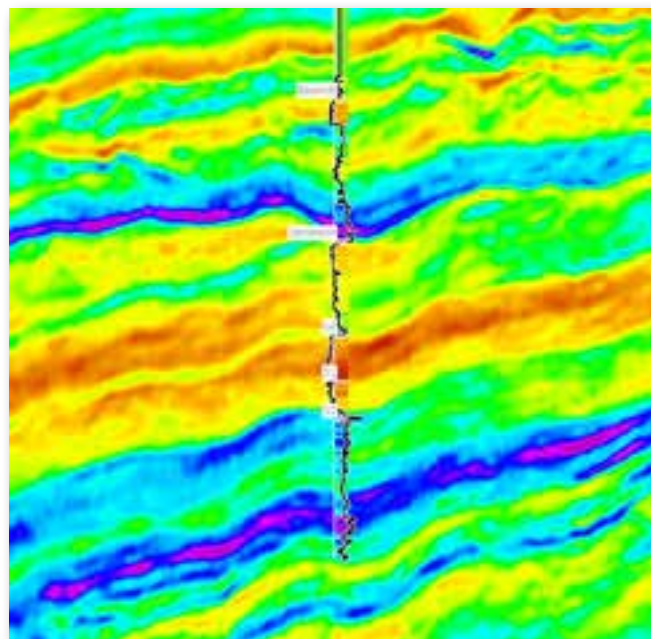


WiBand™

GX Technology's broadband processing yields ground truth.



Conventional Processing*



WiBand Processing*

*Data courtesy of Searcher Seismic

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AREAS OF EXPERTISE

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- Basin Exploration
- Reservoir Exploitation



GX TECHNOLOGY

Dubai students victorious at EAGE London '13 Student FIELD Challenge

A team of MSc petroleum engineering students from Heriot-Watt University, Institute of Petroleum Engineering (Dubai) were declared the winners of the EAGE FIELD Challenge final held in London at the 75th EAGE Conference & Exhibition incorporating SPE EURO-PEC 2013.

Out of 26 universities participating in the challenge that began last September, only four teams were invited to take part in the final competition. Each team delivered its field development plan followed by a 20 minute period of scrutiny by members of the EAGE jury.

After all presentations had been delivered the teams were de-briefed and given the opportunity to question the real field development plan with BP representatives.

The Heriot-Watt Dubai team had flown in early in order to catch the EAGE Opening Ceremony the day before the competition at which there were addresses by HRH Prince Andrew, Duke of York and Egbert Imomoh, president, SPE.

The Student FIELD Challenge itself was once again an intense competition with students having to manage the field development plan research on top of their regular MSc petroleum engineering workload. Institute of Petroleum Engineering (IPE) faculty members and alumni were on hand to lend their support to the team, and recruitment scouts were also in attendance searching for young, talented professionals.

The principal and head of the Institute were both informed when the team's win was announced. Professor Steve Chapman, Professor Dorrik Stow and Prof Ammar Kaka were delighted to hear that Heriot-Watt University students had triumphed again and declared themselves extremely proud of this excellent achievement.

The FIELD Challenge promotes cross-disciplinary geoscience and engineering integration within university departments worldwide. This year four pre-selected teams were set the topic 'Cross-disciplinary Research: the Way to the Future.' All teams were supplied with the same data set from the North Sea provided by BP, with the challenge to analyze the data set and propose a field development plan for a discovered hydrocarbon resource.

The EAGE jury of top industry professionals was looking at how teams addressed the need to move forward and to change frontiers



The winning team (from front to back): Vaishak Arali, Hiren Kasekar, Hemal Mehta and Sadaf Chishti, all Dubai Campus MSc Petroleum Engineering students

by considering sciences that surpass the geosciences scope. Impressed by the high standard of the field development plans presented, the EAGE jury commented that 'all teams performed at an extraordinary technical level of excellence, profes-

sionalism and dedication to their FIELD challenge.'

The Student Programme is sponsored by BP, Total, ExxonMobil, Shell, SPE and the EAGE Student Fund, including Shell, CGGVeritas and WesternGeco.

Crossword solution (from p. 7)

- 1 **Carbonate** - Rainwater from the surface seeps through the ground, absorbing calciumalong the way.
- 2 **Magma** - The name given to molten rock from volcanoes.
- 3 **Focus** - Place where earthquakes start.
- 4 **Mafic** - Minerals or igneous rocks that are rich in iron and/or magnesium.
- 5 **Epicenter** - A point, directly above the true center of disturbance, from which the shock waves of an earthquake apparently radiate.
- 6 **Geochemistry** - A branch of geology dealing with the classification, nomenclature, correlation, and interpretation of stratified rocks.
- 7 **Batholith** - A large body of intrusive igneous rock believed to have crystallized at a considerable depth below the earth's surface; pluton.
- 8 **Compaction** - The consolidation of sediments resulting from the weight of overlying deposits.
- 9 **Diagenesis** - The physical and chemical changes occurring in sediments between the times of deposition and solidification.
- 10 **Sedimentation** - Formation from pre-existing rocks or pieces of once-living organisms.
- 11 **Hydrology** - The science that deals with water on and beneath the Earth surface.
- 12 **Seismicity** - The frequency, intensity, and distribution of earthquakes in a given area.
- 13 **Calcareous** - Of, containing, or resembling calcium carbonate.
- 14 **Midden** - A mound of organic debris or organic-rich soil created by an animal.
- 15 **Reservoir** - A subterranean accumulation of oil or gas held in porous and permeable sedimentary rock.
- 16 **Orogeny** - An episode of mountain building and/or intense rock deformation.
- 17 **Kyanite** - Forms in metamorphic rocks at moderate temperature and high pressure.
- 18 **Veneer** - A thin, widespread layer of sediment covering an older surface.
- 19 **Landslide** - Downslope movement of rock, soil, and mud.

DNO broadens its portfolio in Yemen



DNO Middle East operation.

Norwegian oil and gas company, DNO International has been selected by the Ministry of Oil and Minerals of the Republic of Yemen as successful bidder for onshore Block 84. The company also announced that it has separately entered into a farm-in agreement with respect to Block 36 onshore in the Sultanate of Oman.

Block 84 onshore Yemen covers a surface area of 731 km² and is located in the Masila-Seiyun Basin, adjacent to Block 14 where more than one billion barrels of oil have been discovered. The company already holds interests in five onshore Yemen Blocks, two of which, Blocks 43 and 47, are also located in the Masila-Seiyun Basin.

Block 36 is located in the Rub al Khali basin and covers a surface area of more than 18,000 km². Two exploration wells previously drilled in the block have confirmed the presence of source rock in the basal Silurian hot shale, an organic-rich shale that has sourced the majority of the oil and gas fields discovered in the Arabian Peninsula and North Africa. Multiple stacked potential reservoir units have also been identified and mapped on the existing seismic data comprising 10,000 km of 2D seismic data complemented by high-resolution gravity and

aeromagnetic surveys. Technical work to date suggests potential lead sizes in excess of 100 million barrels.

DNO has been awarded a 59.5% participating interest (70% paying interest) and operatorship of Block 84, joining Turkey's Dogan Enerji Yatirimlari Sanayi ve Ticaret with a 25.5% participating interest (30% paying interest) and Yemen Oil and Gas, a state company, with a 15% participating interest. The partners will acquire new 3D seismic and drill two exploration wells during the first exploration period.

The Block 36 farm-in agreement provides for the transfer to DNO of a 75% participating interest (100% paying interest) from Allied Petroleum Exploration. The company will assume operatorship and fund the reprocessing of existing and new acquisition 2D seismic data and drilling of two exploration wells.

In a separate development DNO says it has initiated production from the first horizontal well in the Tawke field in the Kurdistan region of Iraq at a record rate of 25,000 b/d of oil.

The company previously reported that the Tawke-20 well had flowed an average of 8000 b/d from each of the first four of 10 fractured corridors penetrated by a 600 m horizontal section in the Cretaceous reservoir interval of the field. Each of the remaining six corridors also flowed an average of 8000 b/d. Following completion of testing, the well has been placed on production but is subject to wellbore and surface facilities limitations. Currently, the most productive vertical well in the Tawke field is flowing at an average daily rate of 10,000 barrels.

Drilling operations are underway at a second horizontal well, Tawke-23, and the company is

preparing to commence drilling of a third horizontal well, Tawke-21.

DNO International holds a 55% interest in and operates the Tawke licence with partners Genel Energy (25%) and the Kurdistan Regional Government (20%).

Eni extends contract in Iraq's Zubair field

Eni has signed with South Oil Company and the Iraqi Ministry of Oil an amendment to its Zubair oil field technical service contract in Iraq. The amendment sets a new production target of 850,000 b/d of oil and extends the duration of the contract for an additional five years, until 2035.

The contract for the giant Zubair Oil Field, located near Basrah and regarded as one of the largest oil fields in Iraq, was awarded in 2010 as a result of Iraq's first bidding round. The field has a production plateau target of 1.2 million b/d of oil.

Eni is lead contractor of a consortium that includes Occidental Petroleum Corporation, Korea Gas Corporation and Missan Oil Company.



ENI workers in Iraq.

Egyptian well shows promise

Kuwait Energy, operator of the Abu Sennan concession in the Egyptian Western Desert, is evaluating high resistivity anomalies and hydrocarbon shows observed in the El Salmiya-2 well.

According to concession partner, Beach Energy, four zones of hydrocarbon shows were identified in the well. The plan was to test the well with flow rates anticipated soon after. The

El Salmiya-2 well was drilled to appraise reservoirs in the Abu Roash C and E Members, which flowed at combined gross rates of 2900 b/d of oil and 16 MMscfd of gas in the El Salmiya-1 discovery well (drilled in 2012).

Joint venture equity interests in Abu Sennan are: Kuwait Energy Egypt (50% and operator), Beach Energy (22%) and Dover Investments (28%).

Polarcus finds a multi-client partner

Dubai-based Polarcus marine seismic company has entered into a three year agreement with ION Geophysical to jointly develop, execute, and market 3D marine multi-client projects to E&P companies worldwide.

The agreement combines Polarcus' experience in the 3D multi-client space with that of ION's GeoVentures group's expertise in delivering geologically-driven, basin-scale 2D multi-client surveys. The collaboration will leverage the resources and established third party relationships of both companies, and utilize ION's BasinSPAN data library of over 450,000 km to identify new project opportunities worldwide. Further, the combination of Polarcus' RIGHTBAND acquisition proposition and ION's WiBand data processing technology behind

the company's fleet of advanced, high performance 3D seismic vessels is intended to offer the industry leading edge multi-client data imaging.

Rolf Ronningen, CEO Polarcus, said: 'We are confident that this collaboration will bring value to our clients through the delivery of the highest quality multi-client projects, optimally designed to improve the understanding of the sub-surface geology. Specifically for Polarcus it will enable us to expand our 3D multi-client footprint, utilizing the combined resources and assets of Polarcus and ION to ensure we make the right project choices, and further provide additional stability and flexibility to our vessel scheduling across the globe.'

EAGE Middle East Event Calendar

October 2013

6-8 October 2013

EAGE • Education Days Abu Dhabi

Abu Dhabi, UAE | www.eage.org

28-30 October 2013

AAPG/EAGE • Tight Reservoirs in the Middle East Workshop

Abu Dhabi, UAE | www.eage.org



November 2013

10-11 November 2013

DGS/EAGE/AAPG/SEG • Unconventional Education Days

Dhahran, Saudi Arabia | www.eage.org

23-27 November 2013

Second International Conference on Engineering Geophysics

Al Ain, UAE | www.eage.org

December 2013

8-11 December 2013

Second EAGE Workshop on Naturally Fractured Reservoirs

Muscat, Oman | www.eage.org

January 2014

12-15 January 2014

Second EAGE Workshop on Rock Physics

Muscat, Oman

20-22 January 2014

AAPG/EAGE/SEG/SPE • IPTC 2014 7th International Petroleum Technology Conference & Exhibition

Doha, Qatar | www.iptcnet.org/2014/doha/

February 2014

16-19 February 2014

EAGE/SPE • Subsalt Imaging Workshop

Limassol, Cyprus | www.eage.org

March 2014

9-12 March 2014

AAPG/EAGE/SEG • GEO 2014 11th Middle East Geosciences Conference and Exhibition

Manama, Bahrain | www.geo2014.com/

April 2014

6-9 April 2014

Third EAGE Middle East Exploration Workshop

Abu Dhabi, UAE | www.eage.org



May 2014

11-14 May 2014

EAGE Workshop on Geomechanics in the Oil & Gas Industry

Dubai, UAE | www.eage.org



June 2014

1-4 June 2014

4th SPE/EAGE Workshop on Tar Mats

Dubai, UAE | www.eage.org

16-19 June 2014

EAGE • Amsterdam 2014 76th EAGE Conference & Exhibition 2014

Amsterdam, the Netherlands | www.eage.org

September 2014

7-10 September 2014

EAGE High Performance Computing for Upstream Oil & Gas Workshop

Crete, Greece | www.eage.org

21-24 September 2014

EAGE/AAPG/SPE • Second Shale Gas Workshop

Abu Dhabi, UAE | www.eage.org

28 September-1 October 2014

EAGE • Fifth EAGE Passive Seismic Workshop

Lisbon, Portugal | www.eage.org