



## Welcome to our new Regional Council

Ahmad Al-Suwaidi of ADMA UAE - new chairman of EAGE's Regional Council Middle East (RCME).



**A**hmad Al-Suwaidi of ADMA, UAE - new chairman of EAGE's Regional Council Middle East (RCME), writes:

The New Year marked the 'changing of the guard' for our Regional Council Middle East (RCME) which has done so much to support the activities of EAGE's office in Dubai since it was established in 2007. The Council offers us invaluable advice on how best to serve our members in the region reviewing all our current and planned activities. It also assists us with the promotion of the EAGE and its activities.

For the RCME, we try to maintain a balanced

representation of the geoscience and engineering community in the region. Members are drawn from companies, universities, government agencies, and other organizations with professionals working in the geosciences and engineering field.

In January the outgoing council handed over to the new RCME for 2011–2012. We would like to express our heartfelt appreciation to the departing members for their outstanding contribution over the past few years in helping us establish the firm foundations for the Middle East Regional Office which will enable us to grow our services in the future.

We would also like to welcome and introduce the representatives who have agreed to serve on the new Regional Council. They are:

- Ahmad Al-Suwaidi, (ADMA,UAE), chairman
- Mohammed Alfarej (Saudi Aramco, Saudi Arabia)
- Bahjat Aladwan (Jordanian Geological Association, Jordan)
- Saeed Al-Kuwairi, (OXY, Qatar)
- Mohammad Ali Emadi (NIOC, Iran)
- Khalid Shams Al-Deen (KOC, Kuwait)
- Radmila Pedersen-Tatalovic (Maersk Oil, Qatar)
- Adrian Burke (PGS, Egypt)
- Khalid Al-Thour (Sana'a University, Yemen)
- Ayda Abdulwahab (NOGA, Bahrain)
- Saif Al Hinai (PDO, Oman)
- Basim Al-Qayim (Sulaimani University, Iraq)
- Hisham Al Qassab (ExxonMobil, US and EAGE ME Board member)

The Council meets twice a year, with the first meeting scheduled for March 2011. Members who wish to make any comments or suggestions for the Council's consideration can write directly to Council members by visiting the EAGE website at [www.eage.org](http://www.eage.org) or through the Middle East office at [middle\\_east@eage.org](mailto:middle_east@eage.org). We will be including updates from the Council's meetings in the newsletter.

## Great feedback for our first issue!

*Raymond Cahill, EAGE regional manager, Middle East, writes:* Following the overwhelming success of the inaugural issue of the EAGE Middle East Newsletter, I'm delighted to have this opportunity to write in our second edition. EAGE members who received our first newsletter have given it an enthusiastic response, welcoming it as an informative snapshot of EAGE activities and achievements over the past few months and a helpful guide to upcoming scheduled activities.

The inaugural newsletter was distributed in hard copy with the November issue of *First Break* to all EAGE members in the Middle East and to all participants at our workshops that took place during the last quarter of 2010 and into early 2011. In addition, online distribution of the newsletter reached a far wider global audience thanks to those members expressing an interest in EAGE's activities in the region. In total over 16,000 copies of the inaugural issue were circulated to past, current, and prospective members.

Read more on p. 2 ▶

## Trivia Question

What is the name given to workers who work on a drilling rig drill floor?



- A - Tong operators
- B - Roughnecks
- C - Tool pushers
- D - Yahoos

Answer on p. 7

## What's inside

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## New advisor for student chapter



Dr Sandra Vega.

The EAGE student chapter in the Petroleum Institute (PI) of Abu Dhabi has a new advisor. Last December Dr Sandra Vega took over from Dr Mohammed Ali whose professional experience was much appreciated by students during his time as advisor in 2010. Dr Vega is no stranger to students at PI which she joined in 2005 and is currently an assistant professor. She is well accustomed to providing students at all levels with help in their research projects in rock physics, petrophysics, reservoir characterization, and geomechanics. Her students have had considerable success in presenting their work at regional and international conferences – 15 so far – as well as winning several student contests.

“ Sandra Vega is no stranger to students. ”

Dr Vega is a rock physicist experienced in acoustic lab measurements, seismic-logs lab data correlation, and carbonate fluid substitution. She began her career working for Sismoven-Halliburton, Venezuela as an assistant field seismologist involved in 2D seismic surveys. She then worked for almost seven years in the research and development institute of Intevp-PDVSA as a petrophysicist before going back to school obtaining her Masters and PhD in geophysics from Stanford University.

## Education Days return to Abu Dhabi by popular demand!

Volcanic ash from Iceland disrupted but could not tarnish the success of last year's Education Days format in Abu Dhabi. The good news is that the popular format is coming back this spring. Dates have been set for 17–21 April 2011, so mark this in your calendars.

The Education Days programme provides a great opportunity for our members and others to familiarize themselves with, or improve their knowledge of, some of the hot topics in the E&P geoscience and engineering field, presented by leading experts in the field from industry and academia. The following training courses will be offered:

- Seismic Reservoir Characterization – *Dr Philippe Doyen (CGGVeritas)*
- Uncertainty in Reservoir Management – *Prof Peter King (Imperial College)*
- EAGE Education Tour (EET) 5: Seismic Geomechanics – *Dr Jörg Herwanger (WesternGeco)*
- 3D Tomography by active & passive seismic data – *Aldo Vesnaver (OGS)*



- A Comprehensive Overview of Seismic Data Processing Steps – *Piet Gerritsma (Gerritsma Geophysical Training and Consultancy)*
- Migration, DMO and Velocity Model Building – *Piet Gerritsma (Gerritsma Geophysical Training and Consultancy)*

We encourage as many oil and gas professionals as possible to take advantage of this great continuous education opportunity, which will take place at the Petroleum Institute in Abu Dhabi. For a complete overview of confirmed courses and information on how to register, please visit the EAGE website and look in the menu for Education Events.

## Great feedback for our first issue!

Continued from p. 1

In every issue of the newsletter we intend to cover the ongoing work of regional societies, latest industry news, student affairs, personality profiles, country focus, and of course EAGE activities. But more than just an informative publication, the newsletter is designed to engage members and encourage them to contribute interesting articles for the region appealing to all members whether they are new entrants to the world of geoscience and engineering or seasoned professionals.

Since joining EAGE in February last year, I have been fortunate to meet many people who are very passionate about their industry and their role within it. Most impressively, I've seen their willingness to dedicate a good proportion of their time supporting and sharing knowledge, not only in the development of those areas but to the benefit of the geoscience community as a whole. Looking at the opportunities and chal-



Raymond Cahill, EAGE regional manager, Middle East.

lenges ahead is made so much easier knowing that we can call upon the counsel of the best in the business.

I should emphasize that the EAGE Middle East Newsletter is intended to provide an opportunity for all members to suggest topics of regional interest that we can cover, or better still actively contribute. Meanwhile I welcome your continued feedback and hope that we constantly meet and preferably exceed your expectations.

# Active agenda for Dahran society

Dahran Geoscience Society (DGS) has been providing a busy schedule for its members. A recent highlight was a trip for members to the fascinating archaeological site at Mada'in Saleh, the first UNESCO World Heritage site in Saudi Arabia chosen for its outstanding universal value, cultural prominence, and living testimony to the Nabatean civilization. In October DGS hosted the 2010 SEG/EAGE Distinguished Instructor Short Course (DISC) presented by Dr Colin Sayer, a scientific advisor at Schlumberger's Data and Consulting Services Geomechanics Group in Houston. Title of the course attended by 25 participants was 'Geomechanical Applications of Seismic and Borehole Acoustic Waves'.

Notable speakers at the monthly DGS dinner meetings have been Daniel J. Tearpock, Subsurface Consultants & Associates, discussing 'Professionalism as it applies to petroleum geoscience: the practical application of ethics'; Dr Aldo Vesnaver, Saudi Aramco professor, King Fahd



*DGS group at Mada'in Saleh.*

University of Petroleum and Minerals (KFUPM) on 'Talking and listening to reservoirs: production monitoring by active and passive seismic'; and Dr Larry D. Meckel, exploration consultant

and adjunct professor at Colorado School of Mines, on 'Unconventional petroleum systems: unconventional thinking produces unconventional results'.

## Destination Greece for workshop on naturally fractured reservoirs

EAGE's upcoming Workshop on 'Naturally Fractured Reservoirs' being held on 10-14 April 2011 in Nafplio, Greece is a much anticipated event touching on one of the hot topics in the E&P industry.

*Ron Nelson (Broken N Consulting), a keynote speaker at the workshop, writes:* The workshop is an excellent opportunity to highlight the multi-disciplinary aspects of fractured reservoir technology applications and research. Truly, this work ranges throughout the fields of geology (surface and subsurface), geophysics (active and passive), engineering (reservoir and drilling/stimulation/completion), and geomechanics (drilling and simulation). I hope that the workshop will not only display the range of topics applied in the study of fractured reservoirs, but also illustrate how these various topics are seamlessly in-

tegrated throughout the workflows in exploring for and depleting these complex reservoirs. Of particular current interest, are the newly developing techniques in mechanical characterization

of fracture systems and the rocks that contain them, and learning from micro-seismic programmes measured during either stimulation or injection in fractured reservoirs.

I invite my colleagues to join me in creating an excellent cross-discipline learning event that will expand our knowledge in addressing these multi-porosity reservoirs in a new and more quantitative manner, from early exploration to detailed coupled reservoir simulation.

For further information on the workshop programme and registration, see our website [www.eage.org](http://www.eage.org).



*The castle of Bourtzi, a sentinel in the middle of Nafplio harbour.*

It's called 'The Petroleum Geosciences Social Event', and it's an occasion that the students, faculty, and staff from the Geosciences department at Abu Dhabi's Petroleum Institute all look forward to.

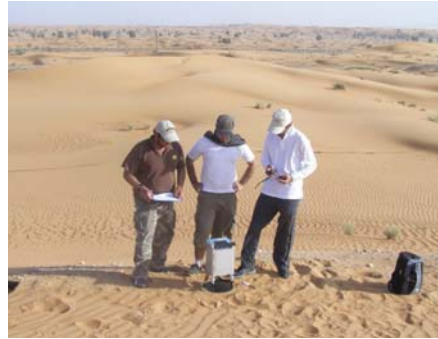
This year's event on 15 March, organized by the EAGE Student Chapter in the Petroleum Institute, will once again focus on various fun activities and sports competitions between students and their instructors. It's a way for everyone to meet and get to know and understand each other outside the formal setting of the classroom. Our pictures show that last year's event in April 2010 was a great success.

Student life is not all social however! If you've ever wondered what it's like to be studying geosciences these days, well, here are some comments gathered from some members of the EAGE Student Chapter in the Petroleum Institute of Abu Dhabi. Their impressions make a great advertisement for the discipline and the opportunities it offers ... and they didn't get any prompting from us!

#### What they said ...

'Being a geosciences student has opened many doors towards an exciting future with plenty of

# Socializing is only one part of student life!



*PI students out in the field with their supervisors.*

job opportunities, and academic research topics. The way problems are addressed is very challenging, yet it is engaging and encouraging to solve a problem with passion and patience. Also, I was privileged to work as an undergraduate research assistant and to present papers at several international conferences. It was really exciting



to meet other geoscientists from different parts of the world and to see that we geoscientists, despite cultural and political boundaries, share many things in common such as the passion for science and being outdoors to study.' *Ahmed Hassan*

'I thought that geosciences involved only geology. But through the entire years of my study, especially the junior and senior years, I found that it is a combination of many sciences. For example, I found physics and math in geophysics and petrophysics, chemistry in general geology and mineralogy, and biology in the paleontology. Therefore, I am proud to be a geoscientist.' *Ahmed Al Hanaei*

'My experience has been amazing since I have been exposed to lots of different activities. The field trips associated with the courses added new flavour to the courses and enhanced my understanding of the theory. I personally like to walk around, collect data, and examine the earth's layers and surface. I prefer to be surrounded by nature such as mountains and trees rather than cars and buildings, so the geosciences for me are an adventure study!' *Amena Al Shehhi*

'It gives me the chance to study a broad-ranging science that could be applied in many disciplines. Field trips are the most interesting part of studying geosciences because it is where you can apply your knowledge and improve other skills, such as problem-solving, critical thinking, and cooperating with other people. I am interested particularly in geophysics and petrophysics where we can use physical measurements to image the subsurface and better understand its rock properties.' *Miaad Alhammadi*

## The experience of being at an EAGE meeting

# Try Not To Miss it!

'For a student from the Middle East, it was a great experience for me to participate in the last EAGE Conference held in Barcelona. Beside the technical side, it was also very nice to be exposed to a different culture and learn something as well about Spanish traditions, food and language.' *Ammar El Husseiny*

Ahmed Hassan from the EAGE Student Chapter of the Petroleum Institute is pictured here while presenting his poster in Barcelona. Participating at an EAGE Conference, either by taking part in a competition or presenting a paper, can help students to get closer to the professional world and also exchange ideas and receive useful feedback.

Students, especially from the Middle East, have the opportunity to experience a part of Europe they may not be acquainted with. For example, the upcoming EAGE Conference in Vienna offers the chance to learn not only about science and technology, but also to build bridges between different cultures. The EAGE's Annual Meeting is not to be missed!



# Workshop took geosteering in the right direction

The EAGE workshop on 'Geosteering and Well Placement' held in Dubai from November 7–10 must be counted as a big success. The event attracted 54 participants from 24 organizations and 18 countries.

Setting the scene for the first session Stephen Williams, leader for petrophysics at Statoil, delivered a keynote address on geosteering asking – Where are we? Where are we going? He discussed the importance of geosteering, and the added value of using advanced logging-while-drilling tools to optimize well drilling and placement. Williams pointed out the challenges ahead. For example, as targets are getting more complex along with tougher operating environments, it was essential that geosteering improved well placements in real reservoirs as part of today's field development economics.

Sessions over the three days covered: (1) Case studies illustrating the state of the art in well placement, mainly represented by the integration of distance-to-boundary inversions from deep resistivity tools integrated with shallow depth of investigation borehole images from density or resistivity; (2) The easily underestimated and intractable issue of resourcing and managing well placement projects in diverse operating environments and cultures; (3) Geosteering in unconventional reservoirs – shales, coal, heavy oil sands, tight and thin beds; (4) Quantifying value on well placement projects; and (5) Future technologies and practices.



Session leader  
Stephen Williams  
from Statoil.

While Baker Hughes, Halliburton, and Schlumberger were each ably represented and have a comprehensive suite of both downhole LWD tools and real-time modelling applications, Weatherford, with its new Earthview product line, did not make it to the party. Paradigm showed results from its 'independent' geosteering application which allows an inhouse well placement solution modelling data pulsed uphole from any vendor's tools. At the economy end of the business, several independent outfits were offering a stripped down service steering mainly from gamma.

Considerable discussion revolved around the challenge of quantifying incremental value to projects from the inclusion of a dedicated proactive geosteering workstream. Service companies acknowledged their limited success at efforts to internally develop key performance indicators (KPIs) for measuring their geosteering projects.

The consensus among non-NOC operators was that the value case was typically poorly quantified but demonstrably exceeded the cost by one or more orders of magnitude. Saudi Aramco, which drills a vast number of geosteered horizontal wells, has attacked this issue from a statistical approach. Other than allowing that results to date have been used in decision trees for bottom hole assembly (BHA) selection, they did not share their analysis. This is an area, however, that requires additional work and one in which a decision risk analysis approach might be fruitfully applied in generating a set of generic end member scenarios to the mutual benefit of both operators and service companies.

As expected, the sessions on unconventional reservoirs and future technologies were particularly well received. On geosteering in gas shales, the current notion that a stripped down gamma service is adequate for most wells was convincingly challenged by Jean-Michel Denichou (Schlumberger). He showed how post-frac PLT (production logging tool) data could be better fitted to a well placement model that incorporated structural dips derived from azimuthal density images in conjunction with the gamma correlation.

The apparent holy grail of future technology in this field is the unfortunately acronymized LALA (look around, look ahead). Jason Pitcher (Halliburton) shared early results in this direction, with a proto-type modification of the tried and tested BAT dipole sonic tool, using azimuthal sonic in horizontal wells in anisotropic shales to derive measures of brittleness and tantalizing first success (post drill with crude binning) of borehole images from sonic. These showed the smiles and frowns characteristic of resistivity and density images and compared well with such data from the same borehole. The implications of such technology to the hunt for 'sweet spots' in gas shales will be clear to all in the onward rush to LALA!

Given the interest, attendance, and quality of the presentations and discussions, keynote speaker Stephen Williams was not alone in predicting that a second 'Geosteering and Well Placement' workshop was sure to follow in two or three years' time.



Participants at Geosteering & Well Placement Workshop in Dubai, UAE.

# Iraqi oil business: mission impossible no longer

Ali Misaghi of Dana Geophysics Company tells the story of how one company has been sounding out business opportunities in post-war Iraq as the country focuses on rebuilding its oil industry.

With the country returning to some form of normalcy, the possibility of expanding its business into Iraq seemed an obvious move for Dana Geophysics Company (DGC), a subsidiary of Dana Energy Group, the largest fully private company in Iran's upstream oil industry. The question was how to make the first move.

Following the dark days of war, the Iraqi government had been making it clear that it wanted to rebuild the country's oil and gas industry with the help of international E&P oil and service

companies, in the first instance by announcing pre-identified blocks and fields for prospecting and development. This seemed like a valuable opportunity for DGC which had been monitoring the regional market for its services, notably 2D/3D seismic acquisition and data processing/interpretation.

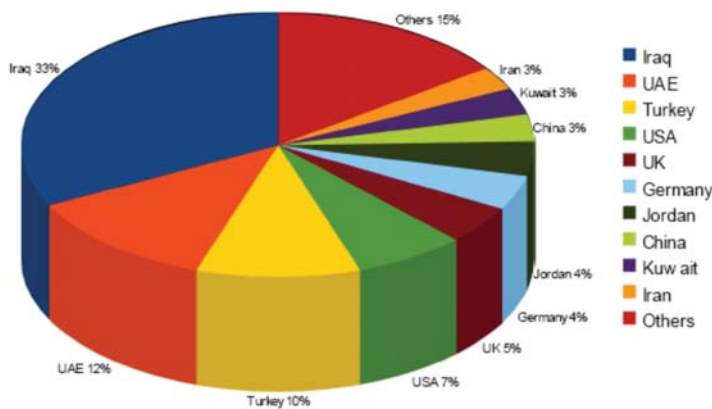
Iraq was a natural fit for DGC in a number of respects. The geological and environmental challenges in Iraq are very similar to those already being met by DGC's team of professionals in Iran. Conditions in Iraq require the same kind

“ One could enjoy good meals and walks along the river, and be witness to the energy of a new generation keen to rebuild their country. ”

of equipment and services. Given the two countries are neighbours, the cost of any mobilization for projects would be low, and communication should be good considering the shared history and culture of the two nations. These were all important considerations when the company's management decided to take a closer look at what would be involved.

To find out more, DGC decided the best way forward was to attend a relevant conference such as the Basra Oil and Gas Conference and Exhibition which was held from 25–28 November last year in Iraq. Obviously security was still a concern in Iraq. After receiving some reliable information from local contacts, we overcame our apprehension and applied for visitor visas. The procedure for getting entry permits was quick and straightforward, probably because everyday thousands of people are visiting their relatives and holy shrines in both countries. Getting to Basra itself was a quick one-hour flight from Tehran to Abadan, a city in southwest Iran, and then a one-hour drive through the Shalamcheh border. Everything went smoothly.

Exhibitors by Country



Breakdown of exhibitors at the Basra event. Graphic courtesy Expotim International Fair Organizations.



In spite of the fact that Basra has suffered several years of war and turbulence, the city is still very much alive. When you leave Abadan, cross the border, and head towards Basra there is little appreciable difference in the local population who are very warm and friendly, while the city itself has architecture similar to that found in some Iranian cities and the local shops are much the same. Security men driving armoured vehicles in special lanes were visible everywhere. This did much to allay any fears we might have harboured, so that during our stay, we never felt unsafe. Personally I think there will be no need for security escorts in the very near future. One could enjoy good meals and walks along the river, and be witness to the energy of a



new generation keen to rebuild their country. The conference itself was opened by a top Iraqi delegation with the participation of a number of ministers, members of parliament, and local officials. Around 218 companies from 30 countries were in attendance and, according to the organizer Expotim International Fair Organizations, about 17,000 people visited the conference and the exhibition. The significance of the event was evident from the presence of representatives from some of the major international oil companies (IOCs) and service providers, together with the Ministry of Oil of Iraq, South Oil Company of Iraq (SOC), and Missan Oil Company (MOC). Some of the presentations were informative in clarifying the current status of Iraq's oil industry, especially in the southern region and in explaining the road map for companies interested in doing business in Iraq.

DGC hosted an encouragingly large number of visitors at its booth in the exhibition, from top managers to technical experts and students and teachers from the universities.

A measure of the event's success and likely interest in Iraq's ongoing oil industry develop-

ment could be seen in the official figures published by the organizer. Moreover, based on discussions with a number of senior government and industry people in Iraq, DGC felt confident to move forward seriously and send official expression of interests (EOIs) offering services to select local oil companies and to some IOCs. In addition, DGC promised to organize some technical courses for university students and young professionals in the local oil industry to facilitate transfer of technologies already available to DGC.

### Trivia answer

**B - Roughnecks.** The roughneck's job is to assist in making connections of drill pipe as a well is being drilled, assist in disconnecting pipe when pulling it back out of the well bore, and to keep the drilling rig clean and in working order.

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# How UAE society is forging links with EAGE

**Abdullah Al-Shemsi, president of the Emirates Society of Geoscience (ESG), discusses the society's role and its collaboration with EAGE Middle East.**

## Could you tell us about your career and industry experience to date?

I graduated with a Bachelor of Science degree majoring in geology with a minor in chemistry from the United Arab Emirates University in Al Ain, UAE. In 1992 I began my career in Abu Dhabi National Oil Company (ADNOC) and the following year, I was seconded to ADMA-OPCO or the Abu Dhabi Marine Operating Company as 'developee' geologist. Moving up the ranks, I was appointed to operation geology as a well-site geologist, then transferred to reservoir geology as lead reservoir geologist. Currently, I am a senior reservoir geologist where my main focus is working on the integration of carbonate reservoir data – fracture, core, and fluid data to create a full field development model used in reservoir simulation and development planning.



*Abdullah Al-Shemsi,  
president of the Emirates  
Society of Geoscience  
(ESG).*

## Could you give us a brief background of ESG?

The ESG is a not-for-profit organization providing a forum for geoscientists in the Emirates. Membership is open to all technical personnel working in petroleum exploration and production companies, associated service companies as well as government and educational institutions in the United Arab Emirates. Students are strongly encouraged to join.

The society was founded in 1987 as the Society of Explorationists in the Emirates and by 1995 had drafted its first constitution and by-laws. In 1999 the society was renamed Emirates Society of Geoscience and presently enjoys affili-



*A core session.*

ation with AAPG (1993), EAGE (2002) and SEG (2006). Our key activities include monthly meetings and lectures relating to the geosciences, geological field trips in the UAE and beyond as well as several events in collaboration with our affiliates and sponsor companies within the oil and gas industry. Our annual dinner held at the end of each season is an event very much anticipated by the members.

## What are some key achievements of ESG under your presidency?

I would list them as follows:

- Co-sponsoring the highly successful 2<sup>nd</sup> EAGE Arabian Plate Workshop in January 2010.
- Set-up of an independent ESG exhibition booth at GEO 2010, Bahrain.
- Sponsored by Total, ESG's partnership with EAGE Education Days in Abu Dhabi (April/October).
- Co-organization of a geological field trip during ADIPEC 2010
- Conducting several lectures and seminars with major international oil and service companies (Total, BP, JODCO, Schlumberger, Western Geco, Baker Hughes, ExxonMobil, Synergy, etc.)

## Can you share your feedback on the partnership with EAGE Education Days?

The Education Days provided access for local geoscientists to international geoscience professionals and academia. It was highly successful and beneficial for all participating geoscientists and we hope such events continue in the future to consolidate

the collaboration between ESG and EAGE.

Looking ahead, ESG is pleased to be an Associate Society of EAGE as it facilitates the exchange of technical information and new methodologies and technologies. The partnership also serves as a platform to encourage more ESG members, especially those new to the industry, to participate in events organized by EAGE. Essentially ESG aims to continue a mutually beneficial relationship which will hopefully increase EAGE membership in the UAE.

## How do you see the future of ESG?

One of the main tasks of ESG is to continue to expand and meet the needs of a growing Emirate population of geologists, geophysicists, and petrophysicists, which hopefully would include more female members. As previously mentioned, it is crucial for ESG to continue its collaborations with different international associations such as EAGE as it provides members access to a network of knowledge, people, and technologies which they can apply locally.

## On a personal note, what motivates you to share your time, energy, and knowledge as ESG President?

I am passionate about earth sciences and it is a pleasure to share this with like-minded professionals and stimulate interest in this field amongst young people. As ESG president, I aim to foster an environment of continuous learning and exchange of knowledge in this exciting field and I look forward to pursuing that goal well after my term.

## Jordan puts East Safawi on the block

The Hashemite Kingdom of Jordan through its organization, the Natural Resources Authority (NRA), has put the East Safawi block on offer for bidding by the international oil and gas industry. Interested companies can submit their offers according to the specific procedures of the bid round and the established production sharing agreement (PSA) model for E&P operations. The round was launched on 19 December with a closing date of 20 March 2011.

## Nefertiti shows promise

Dana Petroleum has reported the drilling of a successful exploration well at the Nefertiti prospect in the South October production sharing contract area, Gulf of Suez, Egypt where Dana has a 65% interest with 35% held by operator, Inpex. The highly deviated well was drilled from an onshore location to an offshore target between July and November last year.

The Nefertiti-1X well was drilled to a measured depth of 14,150 ft, targeting a prospect in the Asl sands. The well encountered 65ft TVD oil bearing sands. As expected the reservoir was moderately pressure depleted and the flow test was completed using an electrical submersible pump (ESP).

Dana hopes to secure 3.9–6.5 million barrels of resources from the well.



Ancient Egyptian Queen Nefertiti.

# Oman well passes production test

Tethys Oil says a successful test has been carried out on the Farah South-5 (FS-5) well on Block 3 onshore Oman where the company is a venture partner. FS-5 tested in excess of 1500 bopd from a 160 m long horizontal section in the Barik formation using an electric submersible pump (ESP). The well has been completed as a producer and is being produced into the Farha South early production system for a long term production test.

The FS-5 well spudded in early October, and was drilled as a stepout exploration well, 6.8 km northeast of the discovery well FS-3. The pilot hole was drilled to a depth of 2370 m. Both the Barik formation and the Lower Al Bashir formation were penetrated with oil shows, and electrical logs were run. Subsequently, a horizontal sidetrack was drilled 160 m within the Barik formation, which lies at 1240 m below ground level. A pump was installed and the well was placed on production. The average daily production rate is in excess of 1500 bopd of 44° API gravity. The drilling rig has been moved to the Saiwan East-4 well, in Block 4, to carry out production tests. SE-4 showed oil in several formations when drilled in the summer of 2010, but was not tested at the time.



Oman drilling operation.

Tethys has a 30% interest in Blocks 3 and 4. Partners are Mitsui E&P Middle East with 20% and the operator CC Energy Development (Oman branch) holding the remaining 50%.

## Syria poised to award blocks

Syria's Oil Minister Sufian Alaw said late December that the government would award contracts to explore, develop, and produce hydrocarbon from eight onshore blocks within two months, according to a Dow Jones Newswires report. Syria had earlier extended the deadline for the bid round to 8 December from 15 September to give companies more time to prepare their bids.

The Ministry has offered production-sharing contracts to explore blocks 3, 4, 5, 7, 12, 14, 16, and 18, located mostly in the eastern and northern parts of the country with a total area of 74,000 km<sup>2</sup>. A tender for four offshore exploration blocks was scheduled for January, according to the Minister.

Syria aims to boost its crude oil production, which has declined from 590,000 b/d in 2006 to 380,000 b/d. Its natural gas production stands at 25 million m<sup>3</sup>/d. International oil companies such as Shell, Total, China National Petroleum Corp, Gulfsands Petroleum, Tatneft, and ONGC Videsh are already working on oil and gas projects in the country

# Al Huqf, Oman: a geological wonder of the Middle East

Dr Alan Heward, PDO, takes us on a tour, courtesy of the Geological Society of Oman.

**A**l Huqf area is a very special area for geologists because there are rocks to look at originating from almost all of Oman's geological history. This is possible because of its location near the eastern edge of the Arabian Plate. This has kept the area up-lifted through long periods of geological time.

Using mineral isotopes, the oldest rocks in the area have been dated at about 730 million years. These are basement rocks, a type of granite which formed deep within the earth's crust from molten rock. Granite is a type of igneous

rock. As the years went by, the basement rocks became covered in layers and layers of rocks, each layer being younger than the one before. Made up of lots of fragments of weathered rock or shell fragments, these are sedimentary rocks. Often they have fossils or features which give clues about how they formed.

Al Huqf area has not always been a desert. At one time, about 300 million years ago, the rocks show evidence of ice sheets having covered the area. At other times, it was under a shallow tropical sea. The layers left behind by these seas often

contain fossils, but the fossils vary a great deal over time. The oldest fossils are mound structures made by mats of algae, which are called stromatolites. Younger fossils include wonderful tropical shells, such as the rudists bivalve.

At yet another time, the area was fairly arid, but with big rivers flowing through. Fossil soils and trees occur in these layers. Each type of climate left behind its own particular pattern of layers of rocks which geologists interpret by looking at what goes on today in places with a similar environment. In the 1950s, geologists began to study and map the region. They used their understanding of the fossils and rock layers present in Al Huqf to help them drill for oil at Fahud, Ghaba, and Haima. They found that the rock layers which produce oil from deep below the ground are the same as those seen at the surface in the Al Huqf area.

So when oil company geologists want to understand the characteristics of the layers of rocks that make up an oil or gas reservoir, they often visit the rocks in Al Huqf. Geologists and students from Sultan Qaboos University and other universities around the world also visit this area to view its fascinating geology.

Much of the area of interest lies within the Arabian Oryx Sanctuary. If you want to leave the blacktop roads to look at the spectacular scenery, geology, and wildlife, then you need to obtain permission from the Ministry of Municipalities, Environment and Water Resources. The Ministry is working to conserve the rich natural heritage of the area.

## Iran to drill in giant Arash gas field

**I**ran was reported in December to be planning gas well drilling operations offshore at the disputed offshore Arash gas field which lies between Iran, Kuwait, and Saudi Arabia in the Arabian Gulf and is estimated to contain some 20 trillion ft<sup>3</sup> of natural gas.

Mahmoud Zirakchianzadeh, Iranian Offshore Oil Company's managing director, told Iran's Mehr Agency that it plans to drill four wells at the field adding that a drilling jacket had been constructed, installed, and was operational at the field. Zirakchianzadeh

has previously said that Iran was proposing development, investment, production, and management be done on a joint basis by the parties involved. "The Iranian Offshore Oil Company has raised the proposal of "partnership instead of competition" for the development of the Arash field as well as other joint hydrocarbon fields."

The Kuwait Gulf Oil Co. and Aramco Gulf Operations have set up the Khafji Joint Operations which is a joint venture between the two states to develop the Arash field referred to as 'Dorra' by Kuwait and Saudi Arabia.

## Egyptian bid round nears deadline

**T**he deadline was closing on 23 January for companies to have submitted applications in the latest bidding round launched last November by Ganoub El Wadi Petroleum Holding Company (Ganope) for seven onshore blocks in Egypt

In four previous international bid rounds a total of 38 blocks have been offered, 19 of which have been awarded. According to consultant Deloitte Petroleum Services the first and second international bid rounds, in 2004 and

2005 respectively, were relatively successful, resulting in four blocks out of the six on offer being awarded in the first round and all seven blocks being awarded in the second round. The third international bid round, in 2006, was less successful with only 57% of the blocks, eight out of the 14 blocks on offer, being awarded. The fourth International bid round was the least successful with no blocks having been awarded.

## OAPEC sets 2011 budget

The 85<sup>th</sup> session of the Ministerial Council of the Organization of Arab Petroleum Exporting Countries (OAPEC) has approved a 2011 estimated budget of \$7.28 billion, which is 4% up from that of the last year. The meeting held in Cairo also discussed several issues concerning the bilateral cooperation between members.

# Calendar of key EAGE events

## March 2011

27-30 March 2011  
**EAGE • Third Passive Seismic Workshop**  
 Athens, Greece | [www.eage.org](http://www.eage.org)

28-30 March 2011  
**EAGE • Libya 2011 - 5<sup>th</sup> North African Mediterranean Petroleum and Geosciences Conference & Exhibition**  
 Tripoli, Libya | [www.eage.org](http://www.eage.org)



## April 2011

4-6 April 2011  
**EAGE / SPE • Joint Workshop 2011**  
 Istanbul, Turkey | [www.eage.org](http://www.eage.org)



10-13 April 2011  
**EAGE • Naturally & Hydraulically Induced Fractured Reservoirs**  
 Nafplio, Greece | [www.eage.org](http://www.eage.org)

12-14 April 2011  
**EAGE • IOR 2011**  
 Cambridge, UK | [www.eage.org](http://www.eage.org)

## May 2011

23-26 May 2011  
**EAGE • Vienna 2011 - 73<sup>rd</sup> EAGE Conference & Exhibition incorporating SPE EUROPEC**  
 Vienna, Austria | [www.eage.org](http://www.eage.org)

## September 2011

12-14 September 2011  
**EAGE • Near Surface 2011**  
 Leicester, UK | [www.eage.org](http://www.eage.org)



## November 2011

8-11 November 2011  
**EAGE • SES 2011 - Sustainable Earth Sciences - Technologies for Sustainable Use of the Deep Sub-surface**  
 Valencia, Spain | [www.eage.org](http://www.eage.org)



15-17 November 2011  
**EAGE/AAPG/SEG/SPE • IPTC 2011**  
 Bangkok, Thailand | [www.iptcnet.org/2011](http://www.iptcnet.org/2011)

28 November - 1 December 2011  
**EAGE • Third Arabian Plate Workshop**  
 Kuwait City, Kuwait | [www.eage.org](http://www.eage.org)

# Kurdistan well tests positive

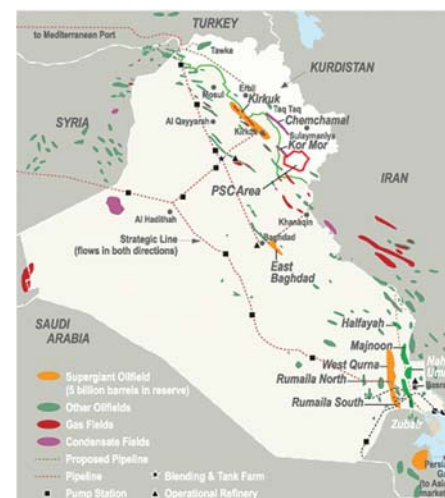
Canadian company WesternZagros Resources has completed test results at the Kurdamir-1 well, in the Kurdistan Region of Iraq, which are said to prove the existence of an oil column in the Oligocene reservoir. An independent audit by the consultancy Sproule International has confirmed a 327 m combined gas and oil hydrocarbon column in the Oligocene.

The company's best estimate of gross contingent gas and condensate resources has increased to 850 billion ft<sup>3</sup> (bcf) and 33 million barrels (mmbbl), respectively, as of 14 December, 2010. Its best estimate of gross unrisked prospective oil resources has increased to 260 mmbbl and its best estimate of gross contingent oil resources is 6.5 mmbbl. The resource estimates do not include the Upper Aaliji, Shiranish and Kometan or Cretaceous reservoir intervals penetrated, but not evaluated, during the drilling of Kurdamir-1, where WesternZagros be-

lieves there is additional oil potential.

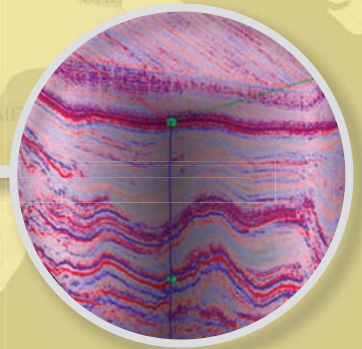
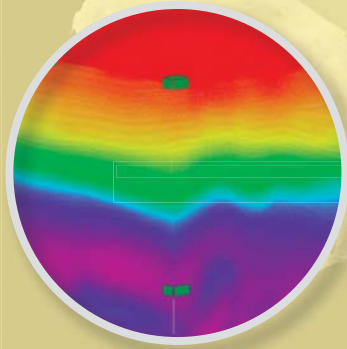
WesternZagros and its co-venturer (Kurdistan Regional Government) plan to drill the Kurdamir-2 well in late 2011. The co-venturers are currently conducting the necessary planning and purchases of long lead items to drill this well on the flank of the Oligocene structure to evaluate the extent of the oil column and to extend the well deeper into the Aaliji and Cretaceous formations to test the over 700 m of hydrocarbon shows encountered in the Kurdamir-1 well.

Simon Hatfield, CEO, WesternZagros, said: 'We are very excited to achieve our primary objective of proving a low sulphur, light oil column in the Oligocene and substantially increasing the prospective oil resources. Our Kurdamir-2 well, which will be drilled next year to test the approximately 700 m of gross interval with oil shows in the Upper Aaliji, Shiranish, and Kometan forma-



tions that we were unable to test in this well, will penetrate the Oligocene on the flanks of the structure and will provide further information.'

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