EAGE

EUROPEAN ASSOCIATION OF GEOSCIENTISTS & ENGINEERS

Fifth Borehole Geology Workshop

21-23 NOVEMBER 2023 • DHAHRAN, SAUDI ARABIA

- **First Announcement**

WWW.EAGE.ORG

TECHNICAL COMMITTEE

Mohammed M. Al-Fahmi (Co-Chair)	Saudi Aramco
Israa Abu-Mahfouz(Co-Chair)	KFUPM
Abdulkareem Roudhan	Saudi Aramco
Mohamed Gouda	Baker Hughes
Ahmed Taher	Halliburton
Chandramani Shrivastava	SLB
Florian Bender	Baker Hughes
Roberto Berto	ENI
Christian Rambousek	NiMBUC Geoscience
Craig Buchan	Task Fronterra Geoscience

WORKSHOP OVERVIEW

Building on the success of the previous Borehole Geology Workshops, held in 2015, 2017, 2019, and 2021, EAGE is pleased to invite you to the 5th Borehole Geology Workshop, scheduled to take place in the oil capital, Dhahran on 21 - 23 November 2023.

Borehole geology has advanced rapidly in the last few decades through acquiring detailed knowledge from vertical and horizontal wells for several applications such (HCs, geothermal, CCUS, energy storage.

The workshop will cover current topics such as Borehole Geophysics, Hydraulic Fracturing, Well and Borehole Hydraulics, Borehole Imaging Technology and fracking for unconventional resources.. The fifth EAGE Borehole Geology Workshop will emphasize on best practices and identify frontiers of the geoscience and technology to improve transforming 1-D borehole data to 3-D earth digital models. The intention is to provide a forum for the geoscience community to participate in most aspects of borehole geology, considering that it is a fundamental discipline to several global industries serving the mining, energy, and environmental sectors.

This workshop aims to promote discussion and knowledge sharing on the different aspects of borehole geology and on its related technological innovations, hydrocarbon reservoir and field studies, best practices, integrated approaches and applications in new fields. The workshop will also be a ground for triggering collaboration amongst borehole geologists and professionals of other subsurface disciplines. It is a unique opportunity to exchange knowledge about the advancements in borehole geology with world-class experts in the field of borehole geology.

Submissions are welcomed under the following topics that use borehole data such as core, logs, images, and tests.

TOPICS

The Technical Committee invites practitioners and industry experts to contribute to this workshop and share their achievements and challenges. Case histories from the participants and theoretical developments from the researchers in the industry and from academia are also welcome. Contributors are welcome to submit an abstract of 2-4 pages in length. Submission for posters & oral presentations is welcome on all topics. Abstracts should be submitted via the EAGE website using the downloadable template. Please see suggestions for topics below:

1. Applications of sedimentology and structural geology

- Subsurface reservoir architecture characterization
- Case studies of borehole data applications
- Frontiers in multidisciplinary approaches of subsurface geology

2. Reservoir Architecture

- Model construction, 2D and 3D restorations, and fracture modeling
- Reservoir geomechanics
- Reservoir fractures / DFN
- 3D MEMs

3. Reservoir Attributes

- Reservoir petrophysics
- Water saturation
- Reservoir geochemistry
- Reservoir microseismicity

4. Well Operations

- Advancements of coring, borehole logging, and geosteering technologies
- Best practices in challenging downhole Environments
- Well stimulation / Deep reservoir sensing

5. Data Science

- New analytical & numerical approaches of earth systems and modelling
- The value of numerical modelling
- Digital transformation

6. Unconventional Reservoirs and New Energy portfolio

- Case studies of challenging unconventional reservoirs
- Hydraulic fracturing
- Geothermal energy
- Hydrogen Storages
- Carbon capture utilisation & storage (CCUS)

Call for Abstracts is open until 31 May 2023, and interested parties are encouraged to submit abstracts in the standard EAGE format of 2-4 pages in line with the workshop subthemes.

This workshop is expected to be an informal but intensive exchange of ideas, insights, and information. The participants, whether presenters or attendees, will find encouragements from the organizers to share their experience on what is always practical, potentially practical or rather theoretical in the business domains. Therefore, there will be a value to bring up unresolved scientific and engineering problems or unsuccessful trials to ad-hoc breakout discussions that will be arranged along with planned sessions of the workshop topics.

IMPORTANT DATES

Call for Abstracts Open	15 February 2023
Call for Abstracts Close	31 May 2023
Technical Programme Available	1 July 2023
Registration Open	1 July 2023

Image credit: Dr. M. M. Al-Fahmi (carbonate outcrop in Dammam Dome, inside Saudi Aramco area).

FIELD TRIP

Trip Leaders: Mohammed M. Al Fahmi
Location: Main Compound of Saudi Aramco, Dhahran, Saudi Arabia
Date: 21st November 2023 (8:00 AM - 12:00 noon)

Aim of the Field Trip:

1. To visit a number of outcrops to discuss geological concepts related to fracture properties, fold structure, karst, and stratigraphy for integrated subsurface geomodeling.
2. To visit some historical sites that led to the first discovery of oil in Arabia with the drilling of Dammam #7 in 1938.

Dammam Dome is the birthplace of Saudi Arabian oil. Dammam Dome is the geologic name given by geologists in the 1930s to Dhahran Hills in Eastern Saudi Arabia. The area is an oval shape of relatively high topography that extends about 15km from north to south.

The Exploration geologists of the Standard Oil of California (SOCAL) surveyed the area after securing a concession with the Saudi State Founding King. By 1934, S.B. Henry and J.W. Hoover mapped a geological structure that they had named Dammam Dome for exploration wells.

The exploration was called off after failing to find economic oil within the Cretaceous strata. These rocks were then known to trap oil resources at Bahrain, Iraq and Iran.

Nevertheless, SOCAL took a last-ditch attempt in response to Max Steineke, who demanded deeper drilling. In March 1938, Dammam-7 Well was drilled deeper and struck economic oil in the Jurassic strata. SOCAL was established and later joined by other companies to found Aramco on the surface of Dammam Dome.

The field trip includes 5 stops of well-exposed Eocene carbonates inside Saudi Aramco campus. The trip by bus is less than 20 minutes from any location in Dammam or Khobar, where the attendees are expected to stay for the workshop.

References:

1. Tleel, J.W. 1973. Surface geology of the Dammam dome, eastern province, Saudi Arabia, AAPG. https://doi.org/10.1306/819A4304-16C5-11D7-8645000102C1865D.
2. Al-Fahmi et al. 2014. Modeling of the Dammam outcrop fractures: Case study for fracture development in salt-cored structures, GeoArabia https://doi.org/10.2113/geoarabia190149.

SPONSORING

Sponsorship packages for all budgets are available for this event, please write to us on middle_east@eage.org OR sco@eage.org to learn about potential sponsoring opportunities.

EUROPE OFFICE
+31 88 995 5055
EAGE@EAGE.ORG

MIDDLE EAST/AFRICA OFFICE
+971 4 369 3897
MIDDLE_EAST@EAGE.ORG

ASIA PACIFIC OFFICE
+60 3 272 201 40
ASIAPACIFIC@EAGE.ORG

AMERICAS OFFICE
+57 310 8610709
AMERICAS@EAGE.ORG

HEAD OFFICE • KOSTERIJLAND 48 • 3981 AJ BUNNIK • THE NETHERLANDS • +31 88 995 5055 • EAGE@EAGE.ORG

www.eage.org

join us on social media!