

Energy Geosciences Research & Development



New Developments and Opportunities in the Middle East & North Africa



CHAIRMEN

Dr. Mahboub Al Chalabi

Director, Petrotech Consultancy, Ascot, UK

Background: Geophysicist, Iraq National Oil Co; Senior Geophysicist and Senior Advisor positions (British Petroleum - UK, The Netherlands, Tunisia, Venezuela)

Dr. Thamir Uqaili

Independent Consultant, Exploration & Field Development, Madrid, Spain

Background: Reservoir Engineer (BPC), Field Manager (NOC), General Manager (CPO) General Manager Planning Department (MOO), Iraq; Area Reservoir Co-ordinator (North Africa) Repsol, Spain

PROGRAMME, AUTHORS AND PRESENTATIONS Day One Monday 18 September 2000

8.30 Registration, Tea and Coffee

9.00 Chairmen Opening Remarks

Dr. Mahboub Al Chalabi, Director, Petrotech, Ascot, UK, and **Dr. Thamir Uqaili**, Independent Consultant, Exploration & Field Development, Madrid, Spain.

9.10 Petroleum System in the Kaikang Trough, Maglad Basin, Sudan

- Stratigraphy
- Structural Setting
- Hydrocarbon Potential

Dr M. Zayed Awad and Ahmed Mahgoub, Greater Nile Petroleum Operating Co., Sudan

9.40 New Frontiers Gas Exploration Area in Western Algerian Sahara; Tindouf and Reggane Basins

- Introduction
- Structural Setting
- Stratigraphy
- Hydrocarbon Potential
- Exploration Activity & Resources

Dr. Djamel Bekkouche, Exploration Manager, Western Algerian Sahara, Sonatrach, and **Mr. Mohand Said Malla**, Chief Geochemist, Exploration Division, Sonatrach, Algeria

10.10 Induced Supra-Evaporites Structures and Deep Seated Faults: a New Play in Hassi Messaoud Arch and Dorban Trough, Algeria

- Introduction
- The New Hassi Terfa (HTF-1) Discovery
- Geological Background
- The New Approach to Seismic Acquisition and Interpretation
- Results

Mr. Sissani Agounizera, Exploration Manager, Amguid-Messaoud Basin, Sonatrach, and **Mme. A. Amoura**, Staff Geophysicist, Exploration Division, Sonatrach, Algeria

10.30 Algerian Offshore: Petroleum Interest and Prospectivity

- Introduction
- Exploration History
- Exploration Potential

Dr. Belkacem Addoum, Exploration Manager, North Algeria, Sonatrach, Algeria

11.00 Morning Coffee

Poster: Hydrocarbon Systems of the Hagfa Trough, Libya: (Generation, Migration, Accumulation and Dissipation Cycles of Hydrocarbons) [PP]

- Introduction
- Methodology: Cumulative Isopachs, Geochemical Source Rocks Analysis, Geothermal Gradients, Basin Modelling
- Discussion
- Conclusions

Mr. Salim Al Mahruqi, Ph.D. Student, Geology Department, Imperial College, London, and Dr. Muhammad W. Ibrahim, Geologist (MENA), Target Exploration, London

11.20 Focusing Exploration - New Applications of Remote Sensing in North Africa and Libya

- Introduction
- Regional Overview
- Country View
- Basin Level Analysis: Examples from the Hamra (Ghadames) Basin of Libya
- Play Fairway Risking
- Follow-up on Structural Targets: Seepage Anomaly Analysis
- Extension into the Offshore
- Conclusions

Mark Broadley, Remote Sensing Geologist, NPA GROUP, and **Dr. Robin Cleverly**, Exploration Application Manager, NPA Group, Kent, UK

11.40 Land Seismic for Reservoir Characterisation

- Introduction
- Data Requirements
- Static Corrections
- Multiple Attenuation

- Imaging
- Data Processing
- Conclusions

Dr. Dave Marsden, Consultant Geophysicist, ACTIS Geoscience Ltd., UK

12.10 Missed, Bypassed, Underestimated Hydrocarbon Traps: Analysis of Basic Exploration Records Reveals "Undiscovery Wells" in Libya

- Introduction
- Geothermal Gradient's Anomalies of Hydrocarbon Entrapment
- Methodology
- Geology and Tectonics of the Hagfa Trough
- Geothermal Gradients of the Hagfa Area (Using Pre-1970 BHT Data)
- Geothermal Gradients of the Hagfa Area (Using Pre-1994 BHT Data)
- Discussion
- Conclusions

Dr. Muhammad W. Ibrahim, Geologist (MENA), Target Exploration, London

12.40-14:00 Lunch Break

14.00 New Upstream Development Opportunities in Iraq

- Initial Upstream Oil and Gas Development Plans.
- Current Upstream Appraisal and Development Contracts under UN Phase VIII Oil-for-Food Programme.
- Future Oil and Gas Upstream Development Opportunities In Iraq

Dr. Munim Al Rawi, Director, Carta Design Ltd, Dublin, Ireland

14.40 Exploring the Wired World: Global Information Management for Exploration Projects

TBS

Dr. Ugur Algan, Technical Director, ILEX Technologies, East Sussex, UK

15.10 Rank, Potential, Dryholes, Undeveloped Fields and Discoveries of the New E&P Blocks of On- and Off-shore Libya

- Introduction
- Geological Input
- Database as Block Ranking Method
- Database 1: Rank, Relative E&P Potential and Undeveloped Fields and Discoveries of the New Blocks
- Database 2: Wells, Undeveloped Fields and Discoveries in the New Blocks
- Example: Block S25 (Sirte Basin)
- Conclusions

Dr. Muhammad W. Ibrahim, Geologist (MENA), Target Exploration, London

15.40 Tectonic Development, Basement Architecture and Hydrocarbon Potential of Northern Arabia

TBS

Dr. S. Z. Jassim and Mr. Ian Somerton, GETECH, University of Leeds, UK

16.00 Economics of Investments in Oilfield Development in Iraq

- Background
- Cost Components
- Surface Facilities
- Cost Distribution
- Cost Indices: International Indices, Iraqi Indices, Exploration Cost, Development Cost, Production Sharing/By Back Contracts, Risk Contracts, Operating Cost
- Return on Investment
- Case Studies: East Baghdad Field, West Qurna Field, Rafidain Field
- References
- Appendices

Dr. Thamir Uqaili, Independent Consultant, Exploration & Field Development, Madrid, Spain

16.40-17.00 Panel Discussions and Chairman Closing Remarks.

Day Two Tuesday 19 September 2000

8.30 Registration, Tea and Coffee

9.00 Chairmen Opening Remarks

Dr. Mahboub Al Chalabi, Director, Petrotech, Ascot, UK, and **Dr. Thamir Uqaili**, Independent Consultant, Exploration & Field Development, Madrid, Spain

9.10 Gas Potential of Saudi Arabia

- Introduction
- · Discovered Gas Accumulations
- Reservoir Stratigraphy
- Regional Distribution
- Deep, Structural and Stratigraphic Traps

- Potential Gas Prospects
- Discovered and Undiscovered Gas Reserves
- Conclusions

Dr. Abdul Aziz Al Laboun, Consultant Geologist, Riyadh, Saudi Arabia

9.40 An Overview of the Sedimentary Basins of Iran and their Hydrocarbon Potential

- Review of Iran's Existing and Potential Oil and Gas Resources Base
- Mohgan Basin
- Khoi-Maku, Tabriz-Shahpur and Mianeh Basins
- Rasht Embayment
- Mzandaran Embayment
- Iranian Caspian Sector
- Gorgan Plain
- Sarakhs Basin
- Main Central Basin
- Isfahan-Saidabad Basin
- Tabas-Kerman Basin
- Lut Area and Sistan Basin

- Jaz Murin Basin
- Makran Basin
- Zagros Basin and the Iranian Continental Shelf

Dr. M. Ala, Senior Academic and Director MSc Programme in Petroleum Geoscience, Imperial College, London. Director of Hydrocarbon Venture Ltd, London.

10.10 Arabian Plate Hydrocarbon Habitat: Hydrocarbon Carrier Systems (O&PP)

- Objectives of Study
- Scope of Study
- Displays (Presentation and Poster)
- Assigning Plate-wide Ages
- Data Processing
- Focus Unconformities
- Focus Areas
- Conclusions

Dr. Walter H. Pierce, Director, WHPierce Exploration, Texas, USA, and **Dr. Everett Rutherford Jr.**, Consultant in Petroleum Exploration, Matrix Geoscience, Texas, USA

10.40 The Use of the Hatta Strike-Slip Fault System as a Surface Analogue to Solve Subsurface Petroleum Exploration Problems in Abu Dhabi, UAE [O&PP]

- Strike-slip faulting and its role in promoting hydrocarbon accumulations.
- Characteristics of oil fields associated with strike-slip faulting in Abu Dhabi.
- The Hatta strike-slip fault system, Northern Oman Mountains.
- The Jebel Rawdha segment as a surface analogue aiding in exploration and development.

Dr. Mohammed Warrak, The Open University, Milton Keynes, UK

11. 00 Morning Coffee

The Major Tectonic Elements Controlling the Structural Evolution of the Iranian Zagros Fold-Thrust Belt [PP]

- The basement faults of the Zagros cover rocks.
- Thrust front control on sedimentation, and deformation of Zagros foreland basin.
- The role of Kazerun and Bala Rud fault zones on the Zagros deformation.

Mohammed Sepehr, Dr. J.W. Cosgrove, and Prof. M. P. Coward, Department of Geology, Imperial College, London

11.20 Can New 3D Mapping, Modelling and Visualisation Technologies Cut Exploration and Production Costs? Examples from the Middle East and North Africa

- Introduction
- New PC hardware developments
- How new software applications can benefit from the latest hardware developments
- Case examples from UK and MENA
- Conclusion and discussion

Mr. Paul Hovdenak, Manager (UK & MENA), Technoguide, Norway

11.40 Stacked Reservoir Fields Habitat, Middle East and Caspian [O&PP]

Dr. Walter H. Pierce, Director, WHPierce Exploration, Texas, USA, and **Dr. Everett Rutherford Jr.** Consultant in Petroleum Exploration, Matrix Geoscience, Texas, USA

12.10 Petroleum Systems and Hydrocarbon Potential of Onshore and Offshore Kuwait

- Introduction
- Geological Evolution

- Tectonic Elements
- Hydrocarbon Source Rocks Systems
- Proven and Potential Reservoirs
- Oil Fields and Undeveloped Discoveries
- Conclusions: Discovered VS Undiscovered Hydrocarbons

Dr. Muhammad W. Ibrahim, Geologist (MENA), Target Exploration, London

12.40-14:00 Lunch Break

14.00 UN Sanctions on Iraq: Issues and Prospects

TBS

Dr. Eric Herring, Lecturer in International Politics, Department of Politics, University of Bristol, Bristol, UK.

14.40 New Exploration Risks in the Gulf Countries

TBS

Dr. Goran Talabani, Consultant & Senior Lecturer at West London Regional Neuroscience Centre at Charing Cross Hospital and Imperial College School of Medicine, Univ. of London.

15.10 Insight from New Regional Seismic Data into the Prospectivity and Hydrocarbon Potential of the Persian Gulf and Offshore Oman

TBS

Mr. Trond Christoffersen, CEO of GGS, Norex Group, Oslo, Norway

15.40 Remaining Prospects in the Middle East and North Africa, are there More Super Giants Left to Discover?

 Remaining Prospects in the Middle East at Year 2000: Iran, Iraq, Kuwait, Oman, Saudi Arabia, Syria, and UAE

- General Comments
- Definition of Giant Fields (GFs) and Super Giant Fields (SGFs)
- Habitat of Giant and Super Giant Oil and Gas Fields in MENA
- Pre- vs. Post Nationalisation GF& SGF Discoveries in MENA
- Pre- vs. Post-Nationalisation Operating Companies: Organisation, Risk Taking and Imagination
- New IOCs Tasks in MENA
- Giant and Super Giant Targets in MENA

Prof. Robert Stoneley, Emeritus Professor of Petroleum Geology, Imperial College, London, and **Dr. Muhammad W. Ibrahim**, Geologist (MENA), Target Exploration, London

<u>16.00-17:00 Panel Discussions</u>

What is the New Role of the Multinational Oil Companies in the Middle East and North Africa: Monitor, Consult, Subcontract, Explore, Develop, Operate or Buy Back?

16.40-17.00 Chairmen Closing Remarks

Standby Presentations

Seismic Stratigraphic Traps in the Arabian Gulf Basin

- ! Introduction
- Mesopotamian reefs from Devonian up to M. Miocene
- Pactors controlling carbonates build-ups (Geographic position, Tectonic setting, Lithological Association, and Paleo-ridges)
- Trapping Conditions
- Direct hydrocarbon indicators and hydrocarbon potentialities of the Arabian reefs
- Conclusions

Dr. Adam Ibrahim, dependent Consultant Geophysicist (Middle East and North Sea), France

Saudi Palaeozoic Trends Extended into Turkey

- Saudi Palaeozoic Trends Extended into Turkey
- Silurian Sources and Oil/Gas Typing

- Ordovician, Permian and Mesozoic Reservoirs
- Structure and Traps
- Potential Reserves

John E. Zumberge, GeoMark Research, Inc., Houston, Texas, USA, Harold A. Illich, White Wolf Exploration LLC, Houston, Texas, USA, and Nicholas R. Cameron, GeoMark Research, Inc., Houston, Texas, USA. (Speaker), Gary F. Gensch, Aladdin Petroleum Corporation, Wichita, Kansas, USA.

South Caspian Trough –Phenomenal Maximum Accumulation of Hydrocarbons

Mr. K. Kerimov, Sh. Kocharli, F. Hajiyev, A. Aliyev and M. Zeynalov, PA G&EG, AzNIPIneft, Azerbaijan

Regional and Domestic Political Consequences of Sanctions Imposed on Iraq, Libya and Sudan

Prof. Tim Niblock, Professor of Arab Gulf Studies and Director of the Institute for Arab and Islamic Studies, University of Exeter, UK.



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